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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1988

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

PART 3 (Pages 1699-3091)

NONDEPARTMENTAL WITNESSES

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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1988

MONDAY, MARCH 30, 1987

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:03 a.m. in room SD–192, Dirksen Senate Office Building, Hon. Quentin N. Burdick presiding.

Present: Senators Stennis, Johnston, Burdick, Cochran, and Bumpers; also present: Senators Armstrong, Beaux, Conrad, Daschle, Heflin, Pressler, Pryor, and Shelby.

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator BURDICK. The subcommittee will come to order. I want to welcome each one of you to the hearing today. We have a large number of witnesses that wish to be heard. Therefore, in accordance with our notification to each of the witnesses, it will take some self-restraint on the part of everyone to hold oral testimony to a minimum in order that all of you who have requested an opportunity to testify may be heard.

I ask that the detailed prepared statements that each of you have worked out very carefully be made part of the record, where it will be carefully reviewed, and if each witness will then summarize or highlight the important points in his oral testimony, it will be most helpful.

Our first group of witnesses today will be the Honorable Senators Pressler and Daschle from the great state of South Dakota. We will then hear the North Dakota witnesses.

SOUTH DAKOTA WATER PROJECTS

STATEMENT OF HON. LARRY PRESSLER, U.S. SENATOR FROM SOUTH DAKOTA

Senator PRESSLER. Mr. Chairman, I shall speak first here, although I shall submit a lot of my statement for the record so we can hear from my two colleagues.

First of all, thank you very much for giving us this opportunity to talk about South Dakota water projects. There are also North Dakota projects, as I see my colleague from North Dakota has just arrived.

I know how tight your schedule is, so I will be very brief to allow our colleagues from North Dakota to make a statement.

As you know, South Dakota has a long history of water development, going back to the turn of the century and the 1944 Flood Control Act.

We currently have several projects under construction in South Dakota and adequate funding is needed to keep them on schedule.

WEB RURAL WATER PROJECT, SOUTH DAKOTA

The largest item in South Dakota is the WEB pipeline project, which will be approximately 70-percent complete by the end of fiscal year 1987. The project needs $33.5 million to be completed. The local sponsors are seeking $21.5 million for 1988. This level of funding is the the same as fiscal year 1987. The administration has requested only $2.3 million. Funding at that level would put the project on hold, delaying its completion and the repayment of loans.

It appears to me that the WEB project meets the criteria for increased funding under the administration's policy, but for some reason, which I have not been able to determine, it wants to put the project on hold.

I urge your committee to provide full funding for the WEB project so that much-needed drinking water can be delivered to thousands of South Dakotans.

BELLE FOURCHE IRRIGATION PROJECT, SOUTH DAKOTA

Work is also underway on the rehabilitation of the Belle Fourche irrigation project. This was the first irrigation project build by the Bureau of Reclamation at the turn of the century. The project is in need of repair. In fiscal year 1987, it will receive $3.9 million and work is underway.

The Bureau has a capability to spend $5.9 million in fiscal year 1988. Again, the administration has requested only $900,000 for this project in fiscal year 1988. Funding at this level would not allow any construction work to be completed; $900,000 would only keep the local Bureau of Reclamation office open. This does not appear to be a very effective way to spend tax dollars.

I again urge the committee to provide Belle Fourche water project funding as close to full funding as possible. There are several other projects in our state, such as the James River improvement project, which needs $150,000; the features of the Gregory County pumped storage project, and other projects, all of which need relatively small amounts to complete investigations.

MISSOURI NATIONAL RECREATIONAL RIVER

I also have some concern about the administration and funding of the Missouri National Recreational River program. Several years ago, a 60-mile stretch of the Missouri River was designated a scenic and recreational river. Last year, $1 million was appropriated for work on the project.

The Missouri River Bank Stabilization Association is objecting to the cost-sharing requirements the Corps of Engineers has imposed. The project was authorized under the National Park Service and the cost-share requirements should be the same as for any other National Park Service project.

The city of Yankton has also proposed a recreation project as part of the Missouri Recreational River project and is willing to cost-share the project. However, the Corps of Engineers is refusing to spend the money appropriated for this project because it is a recreation project and its policy is not to fund such projects.

Congress appropriated funds for these projects and the Corps of Engineers should use those funds to construct feasible projects which comply with cost sharing and other requirements.

I would appreciate your committee looking into this refusal to expend appropriated funds for authorized projects. I would be happy to provide copies of correspondence I have had with the Corps of Engineers of this matter. I also urge you to provide additional funds for this important project in fiscal year 1988.

Mr. Chairman, in conclusion, I am well aware of the limitations the budget deficit places on your committee and the many difficult decisions you will have to make. South Dakotans recognize the need to balance the federal budget and are willing to take their share of funding reductions.

However, the administration's funding proposals for water development in South Dakota are not equitable. I urge you to restore water project funding to a fair level.

Thank you for the opportunity to testify today. I look forward to working with you and others on this issue.

[The statement follows:]

STATEMENT OF SENATOR LARRY PRESSLER

MR. PRESSLER. THANK YOU FOR ALLOWING REPRESENTATIVES OF SOUTH DAKOTA WATER PROJECTS TO TESTIFY IN SUPPORT OF FUNDING FOR THEIR PROJECTS. I KNOW HOW TIGHT YOUR SCHEDULE IS, SO I WILL BE VERY BRIEF AND ALLOW THE WITNESSES FROM SOUTH DAKOTA TO GIVE YOU THE DETAILED INFORMATION AND SUBMIT MOST OF MY STATEMENT FOR THE RECORD.

AS YOU KNOW SOUTH DAKOTA HAS A LONG HISTORY OF WATER DEVELOPMENT GOING BACK TO THE TURN OF THE CENTURY AND THE 1944 FLOOD CONTROL ACT. WE CURRENTLY HAVE SEVERAL PROJECTS UNDER CONSTRUCTION IN SOUTH DAKOTA AND ADEQUATE FUNDING IS NEEDED TO KEEP THEM ON SCHEDULE.

THE LARGEST PROJECT IN SOUTH DAKOTA IS THE WEB PIPELINE PROJECT WHICH WILL BE APPROXIMATELY 70 PERCENT COMPLETE BY THE END OF FY 1987. THE PROJECT NEEDS $33.5 MILLION TO BE COMPLETED. THE PROJECT IS REQUESTING FUNDING OF $21.5 MILLION FOR 1988. THIS LEVEL OF FUNDING IS THE SAME AS THE FY 1987 LEVEL. THE ADMINISTRATION HAS REQUESTED ONLY $2.3 MILLION. FUNDING AT THAT LEVEL WOULD PUT THE PROJECT ON HOLD, DELAYING ITS COMPLETION AND THE REPAYMENT OF LOANS. IT APPEARS TO ME THAT THE WEB PROJECT MEETS THE CRITERIA FOR INCREASED FUNDING UNDER THE ADMINISTRATION'S POLICY, BUT FOR SOME REASON WHICH I HAVE NOT BEEN ABLE TO DETERMINE IT WANTS TO PUT THE PROJECT ON HOLD. I URGE YOUR COMMITTEE TO PROVIDE FULL FUNDING OF THE WEB PROJECT SO THAT MUCH NEEDED DRINKING WATER CAN BE DELIVERED TO THOUSANDS OF SOUTH DAKOTANS.

WORK IS ALSO UNDER WAY ON THE REHABILITATION OF THE BELLE FOURCHE IRRIGATION PROJECT. THIS WAS THE FIRST IRRIGATION PROJECT BUILT BY THE BUREAU OF RECLAMATION AT THE TURN OF THE CENTURY. THE PROJECT IS IN NEED OF REPAIR. IN FY 1987 IT RECEIVED $3.9 MILLION AND WORK IS UNDER WAY. THE PROJECT HAS THE CAPABILITY TO SPEND $5.9 MILLION IN FY 1988. AGAIN, THE ADMINISTRATION HAS REQUESTED ONLY $900,000 FOR THE PROJECT IN FY 1988. FUNDING AT THIS LEVEL WILL NOT ALLOW ANY CONSTRUCTION WORK TO BE COMPLETED. $900,000 WOULD ONLY KEEP THE BUREAU OF RECLAMATION OFFICE OPEN. THIS DOES NOT APPEAR TO BE A VERY EFFECTIVE WAY TO SPEND TAX DOLLARS. I AGAIN URGE THE COMMITTEE TO PROVIDE BELLE FOURCHE PROJECT FUNDING AS CLOSE TO FULL FUNDING AS POSSIBLE.

There are several other projects, such as the James River improvement program, which needs $150,000, the investigation of irrigation and other features of the Gregory County Pumped Storage project, and other projects--all of which need relatively small amounts to complete investigations.

I also have some concern about the administration and funding of the Missouri National Recreational River program. Several years ago a 60 mile stretch of the Missouri River was designated a scenic and recreational river. Last year $1 million was appropriated for work on the project. The Missouri River Bank Stabilization Association is objecting to the cost-sharing requirements the Corps of Engineers has imposed. The project was authorized under the National Park Service and the cost-share requirements should be the same as for any other National Park Service project. The city of Yankton has also proposed a recreation project as part of the Missouri Recreational River project and is willing to cost-share the project. However, the Corps of Engineers is refusing to spend the money appropriated for this project because it is a recreation project and its policy is not to fund such projects. Congress appropriated funds for these projects and the Corps of Engineers should use those funds to construct feasible projects which comply with cost-sharing and other requirements. I would appreciate your committee looking into this refusal to expend appropriated funds for authorized projects. I would be happy to provide copies of correspondence I have had with the Corps of Engineers on this matter. I also urge you to provide additional funds for this important project in FY 1988.

I am well aware of the limitations the budget deficit places on your committee and the many difficult decisions you will have to make. South Dakotans recognize the need to balance the federal budget and are willing to take their share of funding reductions. However, the Administration's funding proposals for water development in South Dakota are not equitable. I urge you to restore our water project funding to a fair level.

Thank you for the opportunity to testify today. I look forward to working with you on this and other issues.

STATEMENT OF HON. THOMAS A. DASCHLE, U.S. SENATOR FROM SOUTH DAKOTA

Senator BURDICK. Senator Daschle.

Senator DASCHLE. Thank you, Mr. Chairman. I think it is noteworthy that the junior Senator from North Dakota is here. By his presence, I have to assume it is a complete endorsement of everything South Dakota is asking for. [Laughter.]

Senator BURDICK. I will ask him.

Senator DASCHLE. Will you ask him?

Senator CONRAD. It is; we are together on this.

Senator DASCHLE. I don't want to take up a great deal of your time because the witnesses that have filed the information necessary to make your judgments are those behind me. They represent the South Dakota Department of Water and Natural Resources, WEB, the James River Water Development Association, and many other organizations.

But I do want to make a few specific points, having submitted my full testimony for the record. The first is that like North Dakota, there are very few elements that have a greater impact on our quality of life than water. Whether it is for agricultural purposes, municipal purposes that we have such a need for in South Dakota, or whether it is for floor control, we have a real serious concern about both the quality and the quantity of water in our state.

As we examine these projects, we find a tremendous record that speaks for itself in South Dakota. The record with regard to WEB, the record with regard to flood control, the record with regard to the Belle Fourche irrigation project, and the broad range of projects in our state speak for themselves. These projects have given great attention to the requirements that the government has outlined for our state with regard to their construction, as well as their need.

They also meet the criteria set out by this administration. The so-called substantially underway requirement is met when you consider WEB and when you consider the project for Belle Fourche. We are substantially underway with WEB with some 13,000 miles of pipeline already laid. We are substantially underway with the Belle Fourche irrigation project, and there are substantial needs already documented for flood control.

So regardless of the project, we are substantially underway, as the President would have us be for further funding. Finally, I might add, Mr. Chairman, that in South Dakota, as I am sure in many parts of North Dakota, flooding is a very serious problem. We are flooded along the James River, we are flooded along the Big Sioux River, we are flooded in many areas around the state. We desperately need to be able to meet the needs that we have with regard to the flood control studies that we are now requesting.

Whether it's Missouri River bank stabilization, the Vermillion flood control project study, the James River flood control project study, those studies are in need of funding this year.

But the emphasis must be put on the fact that we are substantially underway and that those projects that deal directly with the quality of life in our state—whether it is municipal water or whether it is an irrigation project that is considered the grand-daddy of all irrigation projects—deserve full funding in fiscal year 1988.

We need your concern; we need your understanding; and we certainly need your support as these projects come before this committee. I thank you, Mr. Chairman.

Senator BURDICK. Thank you.

[The statement follows:]

STATEMENT OF SENATOR TOM DASCHLE

Mr. Chairman, on behalf of the people of South Dakota I wish to thank you and the other members of the Subcommittee for your continued support of water development in South Dakota. This panel has been very responsive to our state in the past, and I anticipate that it will again assist us in funding legitimate water development projects underway and in the planning process. We are fighting for our financial existence, and one sure way to stabilize our economy is to develop one of the most promising natural resources we have in South Dakota -- water.

We in South Dakota like to say that we have never been short of water -- it simply is located in the wrong place. The Missouri River, and other water sources, have enormous potential to serve our people by providing them with a source of high quality water for municipal, industrial, and agricultural uses. Currently, many of our people are forced to drink water from ground sources that cannot meet federal quality standards, and others pray daily that the forces of nature will not deal them a cruel drought or flood that will put the family farm on the sale block. Responsible water development will bring safe drinking water to all South Dakotans' homes and will help stabilize our agricultural economy by minimizing the effects of droughts and floods.

The problem, of course, is establishing economically and environmentally feasible delivery systems to bring plentiful water to the areas of our state where it is desparately needed. We have an excellent slate of projects in South Dakota, both in progress and in the planning stages, to do exactly that. We look forward to working with this Committee to move those projects forward.

The Reagan Administration has proposed a budget for the Bureau of Reclamation that we consider to be extremely unfair to South Dakota. While the Administration's overall Bureau construction budget proposal has swelled by nearly two-thirds, it has reordered its nationwide priorities in such a way that a few projects in the funding sweepstakes are the winners, and a large number of projects in South Dakota and other western states are put on indefinite hold. This policy is not fair, and it appears to be applied in a highly selective manner.

One case in point is the funding level recommended by the Administration for the WEB Rural Water Pipeline. The Administration claims that it wants to finish projects that are "substantially underway" and put others on the shelf for several years. I urge my colleagues to consider that WEB has completed its pumping plant for the entire system and has constructed over 13,000 miles of pipeline to the homes of thousands of people. It could be completed within a year and a half if fully funded. This is exactly the type of project that the Administration says it wants to complete, but for some unknown reason, it has slashed its FY 1988 budget from $20.5 million to a mere $2.2 million.

This Administration funding request for the model WEB project is not only nonsensical, it is fiscally irrresponsible. While WEB is currently serving thousands of rural families, the WEB system will not be required to begin repaying one penny of its debt to the federal government until the system is completely finished. The Office of Management and Budget, in its recommendation to stop WEB dead in its tracks, is taking the phrase, "penny wise and pound foolish" to new heights. I urge the Subcommittee to reject this proposal and fund WEB at a responsible level of $20.5 million.

A similar case of selective application of the Administration's "substantially underway" test can be found in the case of the rehabilitation of the Belle Fourche Irrigation project. Eighty-two years ago, Belle Fourche became the Bureau of Reclamation's first irrigation project. Four years ago, I worked with many of the members of this panel to reauthorize this "Granddaddy" of Bureau projects, and I am pleased to report that for two solid years we have been moving ahead quickly with the rehabilitation of the project. Now the Administration contends that the Belle Fourche project, which has served South Dakotans for eight decades and is serving ranchers right now, is not "substantially underway" and ought to be shut down.

Mr. Chairman, I simply cannot accept this contention. The Belle Fourche project is currently serving a much larger percentage of its users than many of the projects the Administration proposes to accelerate because it judges them to be "nearing completion." Again, putting all equity arguments about the OMB's reprioritization aside for a moment, the Bureau's application of that philosophy is simply is wrong in this instance.

To add to the problems created by the Administration's budget requests for WEB and Belle Fourche in FY 1988, the Administration has also requested that this panel approve a reprogramming request to redirect 23% of WEB's FY 1987 budget and 29% of Belle Fourche's congressionally appropriated FY 1987 budget for work to be completed at the Fontenelle Dam in Wyoming and the Bantley project in New Mexico.

While South Dakotans support the efforts of our friends in those two states, we cannot support the Bureau's effort to unilaterally rewrite the budget this panel approved last year and fund those projects on the backs of just seven projects out of the eighty-nine budget items in the Bureau's construction budget. If the $12.8 million required for the work at Bantley and Fontenelle were divided equally among all Reclamation projects in the seventeen western states, all Bureau projects would receive a modest 2% reduction. If the burden of the reprogramming request where spread out accross the board in this manner, WEB would be cut $229,600 rather than the $5 million that the Administration proposes, and Belle Fourche would be cut $78,000 rather than the $1.2 million that the White House recommends. I urge the Committee to reject the Administration's damaging reprogramming request and formulate a more equitable method of funding the Fontenelle and Bantley projects.

I would further urge the Subcommittee to settle this matter as soon as possible so that these projects can get started in the field this spring. Prior to the reprogramming request reaching Congress, WEB had taken bids for the FY 1987 season, and I am pleased to announce that those bids have come in $1.8 million below estimate. Belle Fourche, for its part, has machinery in the field poised to go to work, but they must know what their funding situation is in the next few weeks, or it will be too late to spend all of the money allocated by Congress for this construction season.

In a few days this panel will hear from members of the Missouri River Bank Stabilization Association. I strongly support the Association's request of $200,000 for operation and maintenance of existing streambank protection features and $1,000,000 for construction of new protection structures. The 59-mile stretch between Yankton, South Dakota, and Ponca State Park, Nebraska, was designated by Congress as the Missouri National Recreational River Project. This breathtaking prtion of the Missouri is the last stretch of that great River which has not been channelized or otherwise altered by man.

The grandeur of the River must be preserved for future Americans to enjoy. Congress has authorized $21 million for this project, but project sponsors ask for only $1.2 million to secure the banks of the Missouri from the damaging releases of the upstream Gavins Point Dam. Existing structures are in a state of extreme disrepair, and new protection features are needed to maintain the beauty of the River.

In addition to these ongoing construction projects, we urge the Committee to fund the planning and design of some very exciting future projects in South Dakota.

As the Committee is well aware, the Reagan Administration has proposed that Bureau of Reclamation planning activities be curtailed. It is critical that the federal government continue to pursue an agressive planning schedule to meet the water development needs of future generations. I urge the Committee to continue to fund planning and design for a full slate of future water development projects and would especially urge you to fund planning activities at several priority projects in South Dakota.

First, I urge the Committee to appropriate $300,000 for feasibility studies for the Gregory County Pumped Storage Hydroelectric project in south central South Dakota. The Gregory project is one of the most promising projects our nation has for the future. The Corps of Engineers has conducted preliminary studies of this multi-purpose project and has shown it to be a highly feasible project to meet the energy needs of Americans into the twenty-first century. As you will recall, the project was authorized by Congress, pending completion of feasibility studies, in the Water Resource Act of 1986.

The project is designed to pump water into a reservoir on bluffs above the Missouri River during times of low-energy demand, and discharge the water through turbines back into the river to supplement electric production during peak periods. The water in the reservoir could then be used for irrigation and municipal water supply as well.

While the immediate area's demand for energy is not dangerously high at this time, officials estimate that the demand for electricity will be quite high in ten to fifteen years. To complete the project by that time, feasibility studies need to begin now. It is critical that we initiate planning of the Gregory project now, so that it will be available at the turn of the century to provide citizens of middle America with a safe, renewable, and affordable electricity source for years to come.

Second, funding for the final stages of planning activities for the Marty Phase II irrigation project is needed. This project will be considered in an authorization bill I plan to introduce this year. While planning documents are nearly complete and the project appears to be highly feasible, it is critical that the final documents be completed so that an informed decision on the authorization of this project can be made during this Congress.

The Marty Phase II project is one of many economic development projects initiated by the Yankton Sioux Tribe to bring jobs and longtime economic stability to the Yankton Sioux. Agriculture continues to be the mainstay of this small Indian tribe, but lack of moisture limits the extent to which agricultural resources can be developed. I hope that the Subcommittee will see fit to help the Yankton Sioux attain economic self-sufficiency and by providing $300,000 for final studies on the Marty Phase II irrigation project.

Last year, Congress authorized the integration of the Hilltop and Gray Goose Irrigation districts into the Pick Sloan Missouri River Basin program in a House amendment I offered to the Water Resources Act of 1986. These two small irrigation districts will receive low-cost Pick Sloan power as a small part of the federal government's longstanding commitment to the people of South Dakota established in the Flood Control Act of 1944.

Although these projects were constructed only after careful soil sampling and feasibility studies conducted by the Farmers Home Administration, there is some question as to whether or not the Bureau of Reclamation has to duplicate those tests or conduct similar tests prior to Hilltop-Gray Goose being accepted as a Bureau project. I contend that this is not necessary and that it is a waste of federal tax dollars. At the same time, I do not wish to see these two projects needlessly delayed if the Bureau continues to claim that further studies are required. Therefore, I urge the Subcommittee to set aside $200,000 should the Bureau decide that duplicative studies are required.

I also urge the Committee to appropriate $200,000 for the Corps of Engineers to initiate feasibility studies for the construction of a coordinated flood control plan for the Vermillion River Basin in southeastern South Dakota, pending authorization of that study. I have contacted the Senate Environment and Public Works Committee and fully expect it to authorize this study in the very near future.

Both my staff and the project sponsors have discussed with the Corps the possibility of constructing a small retention dam to control the flows of the River during periods of high moisture. I expect that the project would be relatively inexpensive and would have a very high cost-benefit ratio. I strongly urge the Committee to approve the $200,000 and begin these studies so that the people of the Vermillion Basin can avoid the devastating effects of flooding on the Vermillion at long last.

Finally, I ask that the Committee provide $150,000 for a reconnaissance study on the James River to identify flood control alternatives for the James River Basin. In section 631 of the Water Resources Act of 1986, Congress authorized the Corps of Engineers to study possible flood control alternatives on the James. This legislation requires the Secretary to complete a feasibility study within two years of the enactment of the authorization.

The Corps of Engineers indicates that it has the capability to to complete a reconnaissance study of the James in FY 1988. This study is necessary to begin to identify which flood control methodology is most appropriate for the James from both economic and environmental points of view. While some of the more radical proposals to channelize the James are certainly unacceptable to me, I do strongly support this study as a first step toward getting much needed relief for landowners who have for too long been at the mercy of the flooding tendencies of the James.

In addition to funding for FY 1988, many of these projects have the additional capability to use funding for planning activities during the current fiscal year. If there are unspent funds in the Bureau's planning or construction budgets for FY 1987, I urge you to give careful consideration to these worthy South Dakota projects.

Again, thank you for giving me the opportunity to testify before you today. I look forward to working with you to develop South Dakota's bountiful water resources.

STATEMENT OF HON. TIM JOHNSON, U.S. REPRESENTATIVE FROM SOUTH DAKOTA

Senator Burdick. Congressman Johnson?

Mr. Johnston. Thank you, Mr. Chairman. I am grateful for this opportunity for the state of South Dakota to present its case about reasonable and adequate water project funding. Adequate funding of the projects that have been alluded to by Senator Pressler and by Senator Daschle are absolutely key for economic development in our state for flood control for overall quality of life in South Dakota.

Mr. Chairman, I am going to be submitting a substantial statement on my behalf to the committee for its record. But those people on the front line of water development are behind us now. I don't want to detract from the time they have to present their case on these several absolutely crucial projects in the state of South Dakota.

I can only ask the committee to give great consideration to restoring adequate funding for these projects that mean so much to us in the Northern Plains.

Thank you, Mr. Chairman.

Senator Burdick. Your full statement will be incorporated at this point when received.

[The statement follows:]

STATEMENT OF REPRESENTATIVE TIM JOHNSON FROM SOUTH DAKOTA

Mr. Chairman, I want to thank you for allowing me, to come and share with you our goals for water development in South Dakota. Although, I am new to the Congress, I am already aware of this Committee's deep commitment to the needs of South Dakota and rural America, and I want to thank you for that commitment as well.

Mr. Kurle here is with the WEB Water Development Project and he will be talking more about that program, but I would like to submit to the members of this committee that I believe that the WEB project serves as an example of how we like to do things in South Dakota. I say this because WEB is ahead of schedule and under budget. Even so, the Administration has targeted WEB as one of the projects that will have to take severe cuts in the Fiscal 1988 budget while others receive large increases.

I have spoken to you already, Mr. Chairman, about the plans the Administration has for WEB in Fiscal 1987 where they have recommended a $5 million reprogramming of funds away from the project. Today I want to point out what would happen under the President's Fiscal 1988 budget.

This project, which is substantially underway by anyone's measurement at 70% completion, has been cut from a scheduled $20.5 million in Fiscal 1988 to $2.2 million under the Administration's recommendation. I guess this is an attempt by the folks downtown to ruin this project's ahead-of-schedule and under-budget record. Because, if we approve of such a plan, the WEB project will be so delayed and contractors will become so discouraged with the program that I am doubtful the project manager and the WEB Board of Directors could maintain the pace they have kept to date.

In addition, it should be noted that the fiscal irresponsibility on the part of the Administration is blatant in this case. While thousands of rural families are already being served by WEB, the project is not responsible for repaying the federal goverment one cent until the project is completely finished. I urge the Committee to show the Administration how to operate like an efficient business and appropriate the needed money to bring this project nearer completion. You can do that by funding this project at $20.5 million in Fiscal 1988.

Another Bureau of Reclamation project that has been slated for cuts in 1988 and has been targeted for a quick reprogramming in 1987 is the rehabilitation program of the Belle Fource Irrigation Project in western South Dakota. Again, the phrase "substantially underway" must certainly apply to this project. This 80 year old project was the Bureau of Reclamation's first irrigation project. I simply cannot understand the Administration's logic when it contends that it is not substantially underway. I have spoken with you on this project as well, Mr. Chairman, and I know that you are greatly concerned. In fact, I really feel as though I am preaching to the choir by coming before this Committee to talk of the Administration's irresponsibility with regard to these matters. But the proposed reprogramming of $1.2 million dollars away from the Belle Fourche project would put the program at a virtual stand still. Equipment that has been purchased and Bureau of Reclamation employees on the site will spend the rest of the year sitting and waiting for a new infusion of funds. I reques that this Committee set the level of funding for the Belle Fourche project at $5.9 million in FY 1988.

I don't think anyone can view this as an effective use of our tax dollars and I hope that this committee will do all that it can to work out a compromise with the Administration to prevent the situation with WEB and Belle Fourche from occurring according to Adminstration plans. If the funds are so desparately needed for repairs to the other projects that would benefit from the reprogramming, then let's come up with a more equitable, across-the-board approach. And with regard to 1987 and 1988 funding, let's not target projects with tremendous merit and that are indeed substantially completed for a quick buck.

I have not been willing to make the accusation, but many of my constituents have inquired as to whether the Administration's proposals are politically motivated. While not being the defender of their intentions, I have given the Administration the benefit of the doubt in these matters. I would hope that my feelings are correct and that this Committee can convince the Administration to do what makes good fiscal sense and stop targeting these two projects.

In addition to the WEB and Belle Fourche projects, there are several other worthwhile requests for funding in South Dakota.

Later this week, this Committee will hear from members of the Missouri River Bank Stabilization Association. I strongly support the Association's request of $200,000 for operation and maintenance of the existing streambank protectio nand features and $1 million for construction of new protection structures. The 59 mile stretch between Yankton, South Dakota, and Ponca State Park, Nebraska, was designatied by Congress as the Missouri National Recreational River Project. This is the last stretch of the Missouri that has not been altered by man. Only $1.2 million is needed to secure the banks of the Missouri from releases of water from dams upstream. Existing structures are in an extreme state of disrepair, and this appropriation is needed to prevent further damage.

As the Committee is well aware, the Administration has proposed an equally short sighted budget for planning activities. I would submit that we cannot abandon our efforts for effective planning for future water needs. Additionally, the need for effective flood control does not disappear just because the Administration determines that there is a need for quick savings.

Second, I would urge the Committee to appropriate $300,000 for feasibility studies for the Gregory County Pumped Storage Hydroelectric project in south central South Dakota. The Gregory project is one of the most promising projects in this country. The Corps of Engineers has completed preliminary studies on the project and the Committee will recall that this project was authorized in the 99th Congress, pending completion of feasibility studies, by the Water Resource Act of 1986.

The project is designed to pump water into a reservoir on bluffs above the Missouri River during times of low-energy demand, and discharge the water through turbines back into the river to supplement electric production during peak periods. The water in the resevoir could then be used for irrigation and municipal water supply as well.

This project is an effective part of a plan for the future of South Dakota and the nation. In the next couple of decades the demand for electricity in the area of the project will increase greatly. The completion of the project will enable us to be prepared for that demand rather than to react to a need after it already exists. Again this is an example of good planning and I urge the Committee to assist by funding this project at the level I have requested.

Third, funding for the final stages of planning activities for the Marty Phase II irrigation project is necessary for developing the economy of southeastern South Dakota. The Marty Phase II project is one of the many economic development projects initiated by the Yankton Sioux Tribe designed to create and maintain economic stability for the tribe. I plan to introduce legislation authorizing this project in the next several days; however, while the planning documents are nearly complete and the project looks highly feasible, final planning documents are needed in order that an informed decision can be made by the Congress on the authorization of the project. I would urge the Committee to assist the Yankton Sioux Tribe by appropriating the $300,000 needed to complete the studies on this worthwhile project.

Fourth, I urge the Committee to appropriate $200,000 for the Corps of Engineers to intitiate feasibility studies for the construction of a coordinated flood control plan for the Vermillion Water Basin in southeastern South Dakota, pending authorization of that study. I will be contacting the House Public Works and Transportation Committee in the near future to seek authorization for this study and I understand that Senator Daschle is proceeding similarly with the Senate Environment and Public Works Committee.

Finally, I ask that the Committee appropriate $150,000 for a reconnaissance study on the James River to identify flood control alternatives for the James River Basin. In section 631 of the Water Resources Act of 1986, Congress authorized the Corps to study possible flood control alternatives on the James. This legislation requires the Secretary to complete a feasibility study within two years of the enactment of the legislation. It is my understanding that the Corps is capable of completing a reconnaissance study during Fiscal 1988. This study would be of tremendous importance in identifying the causes and possible methods of prevention of flooding along the James. While I oppose the more radical proposals for channelization of the James, I view this as a responsible approach to improving the economic and environmental well being of the areas along the James.

I also understand that there is some question as to whether the Bureau of Reclamation will deem it necessary to duplicate studies performed by the Farmers Home Administration on the Hilltop and Grey Goose Irrigation Districts. As you know, these two projects where incorporated into the Pick Sloan Missouri River Basin last year as part of the Water Resources Act of 1986. It is my sincere hope that we would not have to spend unnecessary funds to duplicate these studies, however, I

would urge the Committee to set aside the $200,000 that would be necessary to complete these studies so that unneeded delays do not occur.

In closing, I would again like to thank the Committee for allowing me to appear here today. I do not envy the difficult task that awaits you as you try to prioritize the many requests you will be receiving for the limited dollars you have to appropriate. However, I will say that I feel very comfortable that this task is in the hands of such capable and fair people. As a private citizen in South Dakota, and now as the Representative of that state, I have noticed an extreme lack of regard and compassion by this Administration for the needs of rural America. It is my hope that I can serve as an advocate for the needs of that important part of our society. I look foward to working with this Committee in developing and implementing a strategy for the future needs of rural America and the nation as a whole.

Funding Requests for the State of South Dakota, FY 1988

1.	WEB Water Project	$20.5 million
2.	Belle Fourche Rehabilitation	$ 5.9 million
3.	Missouri River Bank Stabilization	$ 1.2 million
4.	Gregory County Pumped Storage	$300,000
5.	Marty Phase II study	$300,000
6.	Vermillion Water Basin study	$200,000
7.	James River Basin study	$150,000

Senator BURDICK. Thank you, gentlemen. I can't think of any questions at the moment.

Senator PRESSLER. Mr. Chairman, I might say that the witnesses from South Dakota are very well prepared, and we are very proud of them. We appreciate your willingness to hear them. They will fill in the details.

Senator BURDICK. We live on the same river; we have some of the same problems, and we will see that you get fair consideration.

Senator DASCHLE. We know that you will.

Mr. JOHNSON. Thank you.

GARRISON DIVERSION UNIT, NORTH DAKOTA

STATEMENT OF HON. KENT CONRAD, U.S. SENATOR FROM NORTH DAKOTA

Senator BURDICK. Senator Conrad, I understand you would like to proceed next.

This is my new colleague from the state of North Dakota. We welcome you to the committee. We welcome you to the Congress. We are pleased to have you at the hearing.

Senator CONRAD. Thank you very much, Mr. Chairman. I am going to be very brief. We had intended to have the Governor here but his plane has been delayed. He will be here shortly, I am told. I have other business that I must attend to, so I appreciate the chairman's indulgence.

I have a statement that I would like to enter into the record, so I will be brief with my oral testimony.

North Dakota deserves, and I think no one knows it better than the chairman, full funding for the Garrison diversion unit, not so much because we were promised it in the past; not so much because we have been told over and over that Garrison diversion would become a reality and that North Dakota has already made a great sacrifice, but because the Department of the Interior, the state of North Dakota, and various environmental groups entered into a compact last year, and that compact was a compromise between those who have fought so many battles over so many years on Garrison.

Out of that compact, out of the Garrison Diversion Unit Commission, came a compromise. The chairman was involved; all the Members of the congressional delegation were involved; the Governor was involved; all of the water constituencies of our state were involved. Environmentalists who had long opposed Garrison diversion were involved and the Department of the Interior was involved.

There was an agreement, not an agreement that all of us like; not an agreement that all of us wanted to see, but it was a compromise. It would appear to be a breach of faith of the highest order for the federal government to now go back on its word and go back on its commitment.

As I said, I will enter my full statement for the record. I think the most powerful argument is that funding, full funding for Garrison, is now in the statute. It is in the code. It is part of the law of this country. For the Department of the Interior to go back on what is clearly expressed in the statutes raises grave concerns about the operations of the Secretary and his Department.

Let me just read the express directive of Congress in Public Law 99-294 that:

> The Secretary shall proceed immediately with the construction of the New Rockford Canal and the Oakes Testing Area.

It does not say that he may; it does not say it will be in his discretion; it says that he shall. It could not be more clear. It is in the law.

I know that the distinguished chairman of this committee knows the long history of this project better than perhaps anyone, but we are making a record here and, hopefully, sharing this with our colleagues and the public, will dramatize the need for full funding for Garrison.

This is not a case like many other water projects where there is discretion anymore. Discretion has been foreclosed. Part of the deal was an absolute clear directive in the law, and the law should be obeyed.

With that, Mr. Chairman, I will close and enter the rest of my remarks into the record. I want to thank you, Mr. Chairman, for all of the efforts that you have made on behalf of this project. Certainly, Garrison diversion would not be becoming a reality without the steadfast work that you have done in bringing all of the parties to agreement.

I want to salute you publicly for the efforts that you have made and close my testimony.

[The statement follows:]

STATEMENT OF SENATOR KENT CONRAD

The proposal by the Administration to fund the Garrison Diversion Water Project at $2.5 million for FY 1988 is a breach of faith with the people of North Dakota.

Indeed, the history of the Garrison Diversion Project, dating back to the Flood Control Act of 1944, is a litany of broken promises with citizens of North Dakota. Although over one-half million acres of productive North Dakota farm land were flooded to provide flood control, river navigation, hydropower generation, and municipal and industrial water for down-stream states, the project is delivering water to less than one percent of the acreage originally identified for irrigation in the state.

When the Garrison Diversion Unit Commission submitted its findings to Congress in 1984, it found that the federal government had promised but had not delivered the assistance to replace the economic losses that the state and the Indian tribes incurred. Even our Canadian neighbors, who have often opposed portions of the project, have recognized that the federal government has shunned its commitment. In a March 8, 1987 editorial, the Winnipeg Free Press said that "it now looks as if Washington has decided to simply throw up its hands and forget about its promises." The editorial concluded that "even those [benefits] to which Canada had no objection, appear to be in the process of being wiped out."

Mr. Chairman and members of the committee, the citizens of North Dakota expected funding for the Garrison Diversion Project for FY 1988 to be approximately $33 - $35 million. North Dakotans are deeply angered and resentful of the administration's proposed $2.5 million funding level, and they have every right to be. The proposed $2.5 million is not only another breach of faith with the people of North Dakota, it is woefully inadequate to meet the express directives of Congress in Public Law 99-294 that "[t]he Secretary [of Interior]...proceed immediately with the construction of...the New Rockford Canal...and...the Oakes Testing Area."

I call upon the administration to work with us to restore the level of funding for the Garrison Diversion Project that North Dakotans have a right to expect. If it does, it will restore the level of trust in the federal government that people have a right to demand.

STATEMENT OF JOHN SMITH, SECRETARY, SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

Senator BURDICK. Next is John Smith representing the South Dakota Department of Water Resources.

Mr. SMITH. I am going to have the rest of the South Dakota constituents join me here, if that is acceptable to the chairman. We will get it all over with in one panel. My name is John J. Smith. I am the secretary of the South Dakota Department of Water and Natural Resources. I am here today representing Gov. George S. Nicholson, the new Governor in the state of South Dakota.

Seated to my right are two of the leaders in the water development area in South Dakota, Mr. Jerry Biedenfelt, the manager of the James River Water Development District, which sits just south of the portion of the Garrison project, as I am sure you know, on the James River in South Dakota; and Morris Kurle, who is the president of the WEB Water Development Association.

They have some people who they may want to introduce as we go along. Mr. Don Barber is seated to my far left. Don is the director of the James River Water Development Association. Dan Mergwine is with the Lower James Flood Control Association in the state of South Dakota.

1988 BUREAU OF RECLAMATION BUDGET PROPOSAL

The message I have been sent to convey from the Governor and from the state of South Dakota in the strongest possible terms is that the administration's proposals for both the fiscal year 1987 budget for the remainder of the year and for fiscal year 1988 are totally unacceptable.

I guess we would label the rationale that has been offered to you as a justification for taking these actions as nonsense. We refer to these this as a balogna budget. It is something that I think, frankly, that you, Mr. Chairman, ought not even take very seriously.

We ask you to reject decisively and unequivocally all of the changes that the administration has requested from its earlier submittals on the budget pertaining to both this fiscal year and fiscal year 1988.

Specifically, with respect to the construction budget for fiscal year 1987, we would urge you not to consider a reduction of $5 million from WEB. If they need funding for dam safety at Fontonelle Dam, we would urge you to take it from the Colorado River residents who will be benefited by that.

Second, we would urge you to reject the rescission of $1.9 million from the Belle Fourche funding for this year. Once again, if Fontonelle is so important to the safety of the citizens of the Colorado River basin, let them pay for it.

1988 CONSTRUCTION FUNDING

Third, with respect to the fiscal year 1988 construction budget, we would urge you to reject a reduction of $19.3 million that the administration has proposed for WEB project funding in fiscal year 1988. As has been said here already, that would result in a 2-year delay. We would urge you not to take this action. It would be extremely destructive for the WEB project and for our state.

Last, with respect to the construction budget, we would urge you to also reject the administration's proposal and removal of $5 million from the Belle Fourche project. It will effectively stop the project dead in its tracks. It is a small and a reasonable project. It doesn't add a massive new amount of irrigation anywhere in the country. It is not going to bust the budget and it is not going to add to to our surplus situation. It is a sound project.

BUREAU OF RECLAMATION PLANNING PROGRAM

We would urge you to reject the cut, put it back on its track, and get it done. With respect to the Bureau's planning budget, we would urge you to provide reprogramming authority for three projects: The first of these is the Gregory County pumped storage project. Mr. Chairman, this is a project that we feel will produce very significant benefits for the state of North Dakota as well as for the state of South Dakota. It will produce those benefits in the form of a market for the surplus generation capacity that Basin Electric currently has in your state.

HILLTOP AND GRAY GOOSE PROJECTS, SOUTH DAKOTA

With respect to the Hilltop and Gray Goose projects, these are small irrigation projects along the Missouri River that were integrated into the Pick Sloan system by the omnibus water bill passed last season. We would urge you to authorize reprogramming of $130,000 to get the necessary studies done to get this job done.

Frankly, I say that with some degree of chagrin, I guess, because the projects are already there in place, and I guess one has to ask why they need planning money. We have asked the same question. We would hope that they wouldn't need it. Thus far, the Bureau is insisting on it, I think, through some sort of Pavlovian response that they can't seem to overcome.

Marty II, this is an Indian project we would hope to build in association and in conjunction with the Lake Andes Wagner irrigation project. It is a small project; it is a worthwhile project for a group of Native American people who currently have an unemployment rate of something like 78 percent on the reservation.

In fiscal year 1988, we would urge you to approve a planning budget for Gregory County of $250,000; for Hilltop and Gray Goose of $40,000; Marty II, $200,000. That ought to conclude the planning studies on those three projects.

As a final note here with respect to the Corps of Engineer's planning budget, we would urge you to provide $150,000 for planning on the James River flood control project in South Dakota.

Again, that is an adjunct or related to the Garrison project as its affects the standing in South Dakota. We have a good working relationship with your department of North Dakota. We would like to have this money to keep that effort going.

VERMILLION RIVER BASIN, SOUTH DAKOTA STUDY

Last, with respect to the Vermillion River, we have had a terrible flooding situation there over the last 3 years. There is a group of local folks down there who have organized themselves.

They have spent a considerable sum of money on their own. It is time that the Corps of Engineers got into the act and do what they were supposed to do. We would urge you to appropriate $200,000 in fiscal year 1988 to allow us to further that effort.

With this, I would like to now turn the state of South Dakota's testimony over to Mr. Biedenfeld and the James River Water Development District, and Mr. Morris Kurle of the WEB Water Development Association, for specifics with respect to their two projects.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF JOHN J. SMITH, SECRETARY, SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

Mr. Chairman and members of the Subcommittee, my statement today will be brief and to the point:

We certainly recognize the need to balance the federal budget and encourage you to take the decisive action necessary to accomplish this objective. At the same time, the Administration's proposal to increase Bureau of Reclamation funding in FY 1988 for select projects in other western states at the expense of projects such as WEB and Belle Fourche in South Dakota is both ironic and inequitable. We urge you to revise the Administration's request for the Bureau of Reclamation and adopt an appropriations bill that fairly addresses budgetary objectives and project construction requirements.

Specifically, the Administration proposes to reduce WEB funding by $5 million in FY 1987 (from $21.4 million to $16.4 million) and by $19.3 million in FY 1988 (from $21.5 million to $2.2 million). This reduced funding level would result in at least a two year delay in completion of the WEB project (from FY 1989 to FY 1991). Approximately $67.2 million has already been appropriated by Congress for the $100.6 million WEB project.

In regard to the $48.4 million Belle Fourche project, the Administration is proposing a $1.2 million cut in FY 1987 (from $3.9 million to $2.7 million) and a $5 million cut in FY 1988 (from $5.9 million to $.9 million). This reduced funding level would result in at least a two year set-back in Belle Fourche construction.

Further, the FY 1988 Bureau of Reclamation planning budget west-wide would be reduced almost $18 million (from $29.4 million in FY 1987 to $11.5 million). This could seriously delay and perhaps totally eliminate our proposed planning efforts in regard to the recently authorized Gregory County, Hilltop and Gray Goose projects, and our current planning efforts on the Yankton Sioux Tribe's Marty II project. We are requesting budgetary reprogramming authority in the FY 1987 supplemental appropriations bill to utilize existing Bureau of Reclamation general planning funds as follows: Gregory County - $50,000; Hilltop and Gray Goose - $130,000; and Marty II - $100,000. Also, in FY 1988, we are requesting continued planning funds as follows: Gregory County - $250,000; Hilltop and Gray Goose - $40,000; and Marty II - $200,000.

We believe that the Administration's proposed budget places an excessively high percentage of cuts on South Dakota projects. The total proposed rescissions for all of the Department of Interior budget amount to 4.8% for FY 1987, while the proposed FY 1987 rescissions for the Belle Fourche and WEB projects amount to 29% and 23%, respectively. The total FY 1988 budget proposed by the USBR has been increased by 9.4%, yet the Belle Fourche and WEB budget requests have been decreased by 83% and 89%, respectively. This reduction is neither fair nor responsible decision-making.

The Bureau of Reclamation has not adequately documented the extent of overall construction efficiencies that could be achieved in conjunction with the FY 1988 budget request, and has not adequately recognized the inefficiencies of delaying the construction of recently initiated water resource projects. In conjunction with this matter, the South Dakota State Legislature has approved the attached resolution expressing grave concern over the inequitable aspects of the Bureau of Reclamation budget and urging Congress to adopt a budget that is fair to all concerned.

In regard to the Corps of Engineers' FY 1988 budget, we would like to emphasize two areas of serious need. We must regularly contend with a truly ironic condition in South Dakota in that many areas of the state suffer from drought conditions, especially in western South Dakota, while areas in the eastern one-third of the state have been experiencing severe flooding conditions. In particular, the James River area and the Vermillion River basin have incurred substantial flood damages. Consequently, the James River Water Development District has requested $150,000 and the Vermillion Basin Water Project District has requested $200,000 to be included in the Corps of Engineers' budget to support the necessary flood control studies. We urge your favorable consideration of their request.

In summation, we are willing to do our part to help move forward with sound water projects. In fact, over the last few years the state and local sponsors have made available over $15 million to fund such efforts. We are willing to work together on a partnership basis with the federal government and we ask for an equitable response in the FY 1988 budget.

JAMES RIVER BASIN, SOUTH DAKOTA STUDY

STATEMENT OF JEROLD BIEDENFELD, MANAGER, JAMES RIVER WATER DEVELOPMENT DISTRICT

Mr. BIEDENFELD. Mr. Chairman, I would like to thank you for allowing us the opportunity to come here and provide testimony on the fiscal year 1988 budget. The James River Water Development District has been working aggressively through the state of South Dakota, Senator Daschle, Senator Pressler, and Congressman Johnson in an attempt to negate some of the devastating flooding that is occurring on South Dakota's James River.

We feel that this project would serve to compliment the Garrison diversion project. We have been working extensively with the state of North Dakota to develop a project that would be beneficial to all parties who are concerned. For example, some of the flooding problems that have occurred, is, for example, in 1984 we have over $6 million.

More recently, just as of yesterday, the James River has erupted from its banks and it is causing extensive flooding problems in that area. Congress passed Public Law 99–662 as part of the Water Resource Development Act. Part of that, one of the sections within that bill, was a section that provided for a $20 million authorization.

We are requesting your assistance in appropriating $150,000 to do the necessary studies to allow us to obtain the response.

One thing I would note is that South Dakota has taken a very aggressive approach on this in that throughout all our sources, local tax dollars, whatever the case, we spent over $3.2 million in expediting this project to date. We ask you to support this program.

[The statement follows:]

STATEMENT OF JEROLD L. BIEDENFELD, MANAGER, JAMES RIVER WATER DEVELOPMENT DISTRICT

Mr. Chairman and distinquished members of this subcommittee, we applaud the U.S. Congress for the recent passage of the Water Resources Development Act of 1986 (P.L. 99-662). As you know, flood control is one of the primary objectives of P.L. 99-662 and we strongly encourage you to implement such provisions in regard to the James River area in South Dakota.

The State of South Dakota recommended a series of projects to alleviate the devastating flooding along the James River that has caused millions of dollars of damages. For example, in 1984, flooding caused over $6,000,000 to rural agriculture lands. More recently, the James River has erupted from its banks, flooding residents for months.

The channel of the James River in various locations throughout South Dakota is obstructed by sand bars, debris, silt, and various types of structures. These obstructions significantly increase the frequency and severity of flooding. Congress was advised that the Corps could assist with construction of several flood control projects along the James River. The authorization provisions in Section 320 of P.L. 99-662 was written in response to James River flooding problems.

Section 320 provides a $20,000,000 authorization for channel restoration and improvements on the James River in South Dakota. This includes consideration of off-stream storage, small impoundments on tributaries, and other features to alleviate flooding and improve streamflow conditions. This legislation provides a total of $20,000,000 for these flood control projects with an estimated first Federal cost of $15,000,000 and an estimated first non-Federal cost of $5,000,000.

Over $3,250,000 has already been spent by local and non-Federal entities to alleviate flooding and improve streamflow conditions along the James River. This includes the research and implementation of dam modification or removal, sediment and sandbar removal, and tributary storage reservoirs. There is a definite need for federal support to expedite a study to determine the feasibility of additional cost share practices for rural flood control.

According to subsection 905 (b) of the Water Resources Development Act of 1986, the Corps of Engineers must perform a study, at Federal expense, to determine the feasibility of these rural flood control projects. The cost to initiate this study is $150,000. We need your immediate assistance in ensuring that $150,000 is appropriated for this study to expedite the efforts concentrated towards rural flood control.

This program, as part of the overall James River Improvement Program, has received the support of the South Dakota State Legislative Delegation, South Dakota's United States Congressional Delegation, The James River Water Development District, which is governed by nine locally elected Directors, and locally governed project implementation entities.

JAMES RIVER FLOOD CONTROL
AND
STREAMFLOW IMPROVEMENT FACT SHEET
FOR SECTION 320 OF THE WATER RESOURCES DEVELOPMENT ACT OF 1986

1. Flooding on the James River inundated 21,700 acres of agricultural lands in 1984.

2. Flooding in 1984 caused $6,292,000 in damages to agricultural lands. Additionally, South Dakota highway bridge 50 was severely damaged and homes were evacuated due to flooding and flood caused bank sloughing.

3. Local and state officials are aggressively working to restore the James River for the economical and environmental benefit of present and future generations. More than $3,250,000 has been invested from state and local funds to achieve these goals.

4. Channel capacities have diminished over 50 percent in specific segments of the river when comparing the 1922 survey by W.S. Reeves to subsequent surveys in 1974 and 1982 performed by the Bureau of Reclamation and the South Dakota Department of Water and Natural Resources.

5. Rock dams are located throughout the basin - they number approximately 120 of which 50 are considered major and have a noticeable effect on flows.

6. Log jams caused by trees dying of Dutch Elm disease and falling into the river channel accumulate until large log jams are formed which restrict flow in the river and cause increased sedimentation.

7. Sediment loads brought by the tributaries to the James River cause sand bars to form. These bars obstruct the river's natural flow and reduce conveyance capacity.

8. Operation of Jamestown and Pipestem Reservoirs in North Dakota may be a contributing factor to bank sloughing and extended flooding in the northern reaches.

9. Tributary flows coming from the uplands on a steep gradient meet the virtually flat flood plain of the James River basin. In some instances the river has reversed flow in the northern reach when the tributary, the Elm River, has had large flows.

10. Poor management practices by a small minority of landowners allows tree, trash and animal waste to enter the river, causing flood and health hazards.

11. Minimum flow and flow stabilization are critical to James River water quality both from environmental outlook and the fact that the river is used for irrigation and municipal water supplies.

12. Historic records indicate that in approximately one out of ten years, Jim River flows will be reduced to zero by the month of October.

STATEMENT OF JOHN J. SMITH, SECRETARY, SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

The Water Resources Development Act of 1986 authorized a project consisting of channel restoration, improvements, and other features to alleviate flood damages on the James River in South Dakota. To obtain credit for the non-Federal share of the authorized project, section 104 of the act requires non-Federal interests to apply to the Secretary of the Army for consideration of work carried out by the non-Federal interests prior to enactment.

The state of South Dakota, acting on behalf of several non-Federal interests, is applying to the Secretary of the Army for consideration of work conducted along the James River.Costs incurred by these non-Federal interests during the 5-year period total over $3.2 million. A summary and analysis of these costs is enclosed.

Although the Federal guidelines to determine whether work carried out by the non-Federal interests is compatible with a project for flood control are still being formulated, I feel that these costs are justifiable and should be credited toward the James River project.

WEB RURAL WATER PROJECT, SOUTH DAKOTA

STATEMENT OF MORRIS KURLE, CHAIRMAN, WEB WATER DEVELOPMENT ASSOCIATION

Mr. KURLE. Mr. Chairman and members of the committee, my name is Morris Kurle, and I am the chairman of the WEB Water Development Association, which serves as the local contracting entity for the WEB rural water project, a project which will provide drinking water to farms, towns, and industry in a 13-county area of South Dakota and portions of two counties in North Dakota.

As a local contracting entity for WEB, we have two requests to make of this subcommittee: Reject the Department's proposal to reprogram $5 million in fiscal year 1987 construction funding away from the WEB project, as outlined in Interior's letter of March 13.

We ask that you appropriate $33 million in the fiscal year 1988 budget to complete the WEB project by the end of 1988.

The fiscal year 1987 budget included $21,480,000 in construction funding for the WEB project. Based on this appropriation, the WEB Association awarded construction contracts which will utilize the full amount of the funding provided.

The proposed reallocation would cause serious hardship and delay water service to over 1,000 farms and 30 towns. It would cause hardship and difficulty for the contractors who bid in good faith and who are relying on the fiscal year 1987 budget funds being made available to pay for construction bills for work completed.

A reprogramming request at this date in fiscal year 1987 is irresponsible. We take exception to the statement made in Interior's letter of March 13 that the funds being reprogrammed are unobligated funds. Funds appropriated for WEB in fiscal year 1987 are obligated and will be expended for pipeline construction by the end of the fiscal year.

The policy advocated by the Department of the Interior is to accelerate construction of water projects which are substantially complete and which can be can be completed within 1 year. WEB meets every aspect of this criteria. We respectfully request that the subcommittee provide full funding for the WEB project in fiscal year 1988 in the sum of $33 million. We are grateful for support this subcommittee has given the WEB project in the past. We have made great progress since construction began.

We hope and trust that the subcommittee will give favorable consideration to the WEB project and provide $33 million in construction funding in the fiscal year 1988 budget.

Mr. Chairman, I have included the names of my WEB colleagues in my written testimony that they would be inserted in the record. Thank you.

[The statement follows:]

STATEMENT OF MORRIS KURLE, CHAIRMAN, WEB WATER DEVELOPMENT ASSOCIATION, INC.

My name is Morris Kurle. I am the Chairman of the WEB Water Development Association, which serves as the local contracting entity for the WEB Rural Water Development Project, a Bureau of Reclamation project which will provide drinking water to farms, towns, industry, and livestock in a 13 county area of South Dakota and portions of two counties in North Dakota.

Action Requested of the Subcommittee

As the local contracting entity for the WEB Project we have two requests to make of the Subcommittee;

1. Reject the Interior Department's proposal to reprogram $5,000,000 in FY-87 construction funding away from the WEB Project, as outline in Interior's letter of March 13, 1987 (see Attachment #1).
2. Appropriate $33,000,000 in the FY-88 Budget to complete the WEB Project by the end of 1988.

Reject Reprograming Proposal FY-87

The FY-1987 Budget included $21,480,000 in construction funding for the WEB Project. Based on that appropriation, the WEB Association awarded construction contracts which will utilize the full amount of funding provided in FY-87 (see Attachment #2). The proposed reallocation would cause serious hardship and delay water service to over 1000 farms and over 30 towns. It would cause hardship and difficulty for the Contractors who bid in good faith and who are relying on FY-87 Budget funds being available to pay construction bills for work completed. A reprogramming request at this late date in FY-87 is irresponsible.

If funds are needed Congress should consider including additional funds in the FY-88 Budget or if it is essential that funds be made available in FY-87 then the reprogramming should be shared by all 89 water projects in the Bureau's FY-87 construction budget, rather than have 8 projects shoulder the $12,800,000 shortfall.

We take exception to the statement made in Interior's letter of March 13, 1987 that the funds being reprogramed are "unobligated funds". Funds appropriated for WEB in FY-1987 are "obligated" and will be expended for pipeline construction by the end of the Fiscal Year. The specific obligations against FY-87 funds are listed below;

1. Contract 3-1B/Main Transminssion Pipeline	$ 1,816,000
2. Contract 3-2B/Secondary Pipeline (Leola)	2,590,000
3. Contract 3-3B/Water Storage Tanks (Leola)	253,000
4. Contract 4-2E Secondary Pipeline (Aberdeen)	$ 4,369,000
5. Contract 4-2F Secondary Pipeline (Frederick)	4,172,000
6. Contract 4-1A Main Transmission Pipeline	2,173,000
7. Contract 4-2AB Secondary Pipeline (Warner)	1,518,000
8. Contract 4-1B Main Transmission Pipeline	3,262,000
9. Contract 4-2C Secondary Pipeline (Groton)	1,408,000
10. Contract 4-1D Main Transmission Pipeline	1,338,000
11. Contract 4-2D Secondary Pipeline (Warner So.)	901,000
12. Contract 4-1E Main Transmission Pipeline*	1,894,000*
Engineering, Inspection, Easements, Legal, etc	3,328,000
Bureau of Reclamation Admin. Costs	140,000
TOTAL OBLIGATIONS FY-87	$29,162,000

Bids are scheduled to be opened on Contract 4-1E on March 31, 1987(*).

FY-88 Budget Appropriation

The FY-88 Budget proposed by the Administration includes $2,255,000 in construction funds for the WEB Project. Construction could be completed by the close of 1988 if Congress were to provide $33,000,000. The WEB Project will be 70% complete at the close of 1987 provided FY-87 funds are not reprogramed. The major features of the Project have been completed, including the Pumping Plant at Lake Oahe, a central Water Treatment Plant, a Main Storage Reservoir, and 89% of the Main Transmission Pipeline which serves as the delivery system for the entire Project.

The policy advocated by the Department of Interior is to accelerate construction of water projects which are "substantially complete" and which can be completed within one year. WEB meets every aspect of this criteria (see Attachment #3). We respectfully request that the Subcommittee provide full funding for the WEB Project in Fiscal Year 1988 in the sum of $33,000,000. The WEB Project has consistently met it's construction schedule and utilized all funds provided by Congress. Construction bids have consistently came in below the Engineer's estimate. Engineering feasibility studies were completed by private engineering consultants directed by a local steering committee and paid for with local funds. These engineering studies were completed in less than two years.

Repayment

Adequate funding for the WEB Project in Fiscal Year 1988 will assure early repayment of federal loans. The repayment contract between the WEB Water Development Association and the United States provides that payment of loans begins when construction is completed and the entire Project is operational. Reduced funding will delay construction and extend and delay the date when repayment will begin. WEB members eagerly await completion of the Project.

Project Summary

Construction of the WEB Project represents the first funding for a major water project in South Dakota since 1977. WEB represents a partial compensation to South Dakota for the loss of over 500,000 acres of productive farm lands which were inundated by construction of the main stem dams and reservoirs on the Missouri River under the Pick-Sloan Act of 1944. Those reservoirs provide flood control, electrical power generation, and navigation to the region and provide important barge transportation for the United States.

The WEB Project was first invisioned in 1975 by local officials in Walworth Edmunds, and Brown Counties of South Dakota, thus the Project got its name from the initials of those first 3 counties. The project area quickly grew to include 13 counties in South Dakota and parts of two counties in North Dakota. When complete, the WEB Project will serve 4,055 farms and 63 Towns and bulk users. The WEB Project is larger in size than the State of Connecticut. The source of water is Lake Oahe Reservoir which is an impoundment of water created by the construction of Oahe Dam, a U.S. Corps of Engineers facility built under the Pick-Sloan Act of 1944.

The area to be served covers 5,245 square miles of land area. Over 500,000 head of livestock will receive water from the system. The project area covers about 8% of the land area of the State. Within the area over 85% of the residents are signed up to the Project. The

116 mile Main Transmission Pipeline ranges in size from 14" to 30" and is constructed of ductile iron manufactured in the State of Alabama. The 3,401 miles of Secondary Pipeline range in size from 1½" to 14" and are made from polyvinal (PVC) manufactured in Kansas and North Dakota from a by-product of the natural gas industry (resin)which comes from the states of Louisiana and Texas.

Feasibility and Environmental Factors

The project feasibility and repayment capability were examined by the Bureau of Reclamation and the Office of Management and Budget in 1983 and approved. All construction plans are reviewed by the Bureau of Reclamation and the South Dakota Department of Water and Natural Resources before contracts are advertised for bid and contracts awarded. Historic and cultural resource surveys are completed and sensitive areas are avoided before construction begins. The WEB Project will result in no negative environmental impacts and has no local or national opposition.

Engineering, Planning and Inspection

The engineering design of the project has been completed by Bartlett and West Engineering with offices in Bismarck, North Dakota and Topeka, Kansas and Boyle Engineering Corp., Bakersfield, California. Construction inspection is performed by Resident Engineers assigned by BW/BEC and assisted by technicians hired by the WEB Association. Some of these inspectors will remain with the Project as operators when construction is completed.

Water Service

The first WEB members began receiving water on May 24, 1986. The WEB Water Treatment Plant and Phase I distribution were dedicated at a public ceremony on May 30, 1986 with Bureau of Reclamation Commissioner C. Dale Duvall as the guest speaker. (see Attachment#3) From May 24, 1986 to March 30, 1987, over 1,500 miles of pipeline have been constructed and made operational, and water service has been made available to 1,304 farm families in South Dakota and 170 farm families in North Dakota as well as 17 Towns. (see Attachment #4).

Economic Impact In Other States

While the WEB Project will bring the benefits of better water to South Dakota, the construction of the Project has economic impacts in other States. The pumps, pipe, motors, control equipment, and hardware needed to build the WEB Project is coming from all over the country. States like Alabama, Minnesota, Louisiana, Tennessee, Pennsylvania, New Jersey, Colorado, Ohio, North Dakota, Kansas, and many others have benefited from WEB construction. (see Attachment #5)

Authority

The WEB Project was first authorized by Congress in September of 1980 (PL 96-355), which called for deauthorization of the Oahe Irrigation Project before construction of WEB could begin. The WEB Project was reauthorized in September, 1982 (PL 97-273). The Project Design Report was completed in September of 1983, Repayment Contracts were signed, and project construction began in October, 1983.

Project Cost

The total cost of the Project is estimated at $105,437,000. As of February, 1987 a total of $49,810,000 has been expended on construction of the Project. Contracts totaling $29,000,000 have been awarded in Phases 3 and 4 and construction is presently underway. (see Attachment # 2)

Local Funding

Local funding for construction includes $1,000,000 in local hookup fees collected from WEB members, $3,100,000 in grant funds provided by the Oahe Conservancy Sub-district a regional water district, a loan of $300,000 and a grant of $1,600,000 from the State of South Dakota, a $3,000,000 in "in kind match" provided by landowners who have granted over 14,000 acres of easement for construction purposes.

Need

The quality of ground water in the WEB area is poor, and in most cases fails to meet the Federal Safe Drinking Water Standards. (see Attachment # 6) Over 25% of the water consumed on farms and in Towns in the WEB Project area from ground wells is not fit for human consumption. Most ground water is high in iron, manganese, sodium, sulfate, and total dissolved solids. The poor water quality causes stress on livestock resulting in reduced milk production, weight loss, dehydration, and general health problems. Ground wells are difficult to maintain and costly to replace. Artesian wells often last only 10 to 15 years and can cost from $20,000 to $28,000 to replace. For a farm family hard pressed by current economic conditions, the cost of having to replace a well adds to their struggle as they try to stay on the land.

Conclusion

We are grateful for the support this Subcommittee has given the WEB Project in the past. We have made great progress since construction began in 1983. The funding provided has been effectively used to bring the benefits of good quality drinking water to thousands of farms and ranches and municipal homes in North and South Dakota.

The importance of good quality water can not be overstated. Water makes up 70% of the human body. We rely on water for our very existance. The WEB Project is correcting a water quality problem that has plagued my area of South Dakota since the homestead days of the 1800's when the Dakota Territory was first opened up for settlement. My grandparents, and others like them, immigrated from Europe and southern Russia to the Dakota Plains to develop the prairie into farmland and build towns and communities where none existed before. Water has always been limited there. Unless you have lived in an area where water is limited or of poor quality it is hard to understand or appreciate how important good water really is.

Since the days of statehood, South Dakota residents have dreamed of harnessing the clear blue waters of the Missouri River to quench the thirst of rural areas badly in need of better water quality. By the end of 1987 the WEB Project will be 70% complete. All that is left is to follow-through with the committment and provide the funding needed to complete the Project in 1988.

We hope and trust that the Subcommittee will give favorable consideration to the WEB Project and provide $33,000,000 in construction funding in the Fiscal Year 1988 Budget. We will do everything within our power to see to it that the funds provided are expended in a prudent and responsible way and that early completion of the WEB Project is secured.

STATEMENT OF WEBSTER, S.D.

Mr. Chairman, and members of the Energy and Water Development Subcommittee on Appropriations. I am Charles W. Kuecker, appointed by the City of Webster, South Dakota to appear on their behalf. I live in Webster and have a great deal of interest in the WEB Pipeline Project as a user and as a concerned citizen of the area to be served by the WEB Pipeline Project.

The WEB Pipeline Project is a Bureau of Reclamation Project being constructed under Public Law 96-335 and 97-237.

It is my pleasure to be here to support this worthwhile project with others who have worked many long hours to bring it to about 70 percent completion.

SUMMATION

It is our request that the Appropriations Subcommittee approve the line item appropriation for the WEB Pipeline Project as you have in the past. We are very thankful for your past support in an area depressed by the farm problems and lack of industry at this time. We look forward to completion of the project which will help provide a better quality life and save local people many dollars in locating and treating water from the existing sources of ground water in the area.

Please accept my sincere thanks for your support on behalf of the City of Webster and surrounding area.

1. The members of the WEB Water Development Association including the City of Webster, South Dakota are very pleased with the project to date. The project has been ahead of schedule due to your support, excellent engineering, and local management of the project construction phase.

2. As you know the project will be one of the finest rural water systems in the country when completed It will serve many

towns, farms, homes, and industries with water quality that will be palatable and safe for domestic use as required by the Safe Drinking Water Act, Public Law 93-523. Your interest and support has been very important in bringing the project to this stage.

3. It has been estimated that 20 to 25 percent of the water consumed in the WEB Project area is not fit for human consumption. I think this is a conservative figure. Poor quality water reduces animal production and results in health problems in humans as well as livestock. The City of Webster is one of these towns, (population 2,500) where water should be reduced in total dissolved solids to meet the recommended maximum contaminant levels (RMCLs) as proposed by the Environmental Protection Agency.

4. The City of Webster was one of five communities chosen by the Department of Interior as a demonstration plant location to determine the feasibility of desalination of brackish water during the 50s. The proposed process was electrodialysis, a membrane process utilizing specific ion selective membranes in an electrically charged cell. The facility began operation in 1961 and continued until 1973. During those years another membrane process, reverse osmosis was also evaluated on Webster water. Pretreatment of the water from Webster wells always introduced a new challenge with many problems,since the membrane processes were very sensitive to specific ionic contituents which continued to add to the cost of treatment.

As reported in the final Webster Test Facility reports of the operation, the costs of estimated operation of this facility indicated that it would not be practical to support the use of the membrane processes in areas where the population is as small as the City of Webster.

The pretreatment lime-soda-ash facility is still in use by the City as a treatment plant today.

With higher than usual total dissolved solids in the Webster raw water the City will not meet the Safe Drinking Water standards without desalination or locating another source of water. The later was the choice of the City which will depend on the WEB Pipeline Project for water upon completion of that system.

5. In addition to the water quality in the City of Webster we are also very interested in the surrounding countyside and

other communities in the area. Many of these communities are having severe problems with water availability and treatment. Some of the farm wells have high nitrate problems and the cost of deep wells considering the water quality are out of the question economically. Many people in the area are using bottled water as a source of drinking water because of health problems. The support for the WEB Pipeline Project is very good in the area with hope that it will become a reality very soon.

CONCLUSION

When a project of this magnitude has progressed to the point where it is, it would not be cost effective to curtail the construction now only to start up again at a later date. We must continue toward completion of this fine project which has had your very good support and consideration.

With 26 years in the water business, I feel confident in my support of this project. I ask your support now to continue this great idea and to help us provide better quality water to the depressed farm and business communities of our area.

JAMES RIVER BASIN, SOUTH DAKOTA STUDY

STATEMENT OF JOHN GARDNER, JAMES RIVER DEVELOPMENT DISTRICT

Mr. GARDNER. I am John Gardner of the James River Development District. I am real happy to be here to support this request, and my request is that the funding be restored to the Corps of Engineers for the study of the James River restoration proposal.

It is difficult to continue without the Corp's assistance at this time. I don't regard the project as a new start for the Corps, since the state has already got $3.2 million in it, and I would like to request that the money be restored and we can continue with the program.

Thank you.

Mr. SMITH. Mr. Chairman, that concludes our remarks. Again, I guess from our point of view, the issue is one of fairness. To increase the Bureau's budget by $100 million while at the same time a significant reduction reducing funding for our projects is simply unfair. We are a small state. I guess we suspect that is why this action is being taken.

We would urge you to watch out for us and reapply the fairness that the administration has taken away. I would also like to submit, Mr. Chairman, for the record, a copy of a resolution passed by both houses of our legislature supporting the restoration of funding as we have testified. Thank you.

Senator BURDICK. The resolution will be received.

[The resolution referred to follows:]

STATE OF SOUTH DAKOTA

SIXTY-SECOND SESSION, LEGISLATIVE ASSEMBLY, 1987

471L747 HOUSE CONCURRENT RESOLUTION NO. 1019

Introduced by: Representatives Ham, Cutler, Hier and Mateer and Senators Stoick, Brown, Dunn, Kleinsasser and Lamont

A CONCURRENT RESOLUTION, Requesting that the United States Congress restore and appropriate funds to continue with the construction of the WEB rural water system and Belle Fourche rehabilitation project as currently scheduled and to conduct general investigations of other currently proposed or authorized water projects in South Dakota.

WHEREAS, the state of South Dakota has already spent considerable time and funds in developing state water project priorities; and

WHEREAS, the United States has previously committed to provide construction and study funds to jointly move forward with such projects; and

WHEREAS, the United States Department of the Interior has proposed a reduction in funding for South Dakota water projects in fiscal year 1987 and fiscal year 1988 in order to increase funding of water projects in other states; and

WHEREAS, the state of South Dakota is willing to do its share to help accomplish balanced federal budget objectives if such measures are equitable to all involved states; and

WHEREAS, the proposed funding reductions are inequitable and would seriously delay the construction and planning schedules for our state water project priorities; and

WHEREAS, these South Dakota water projects enjoy strong local citizen support:

NOW, THEREFORE, BE IT RESOLVED, by the House of Representatives of the Sixty-second Legislature of the state of South Dakota, the Senate concurring therein, that the United States Congress swiftly adopt legislation to restore fiscal year 1987 funds and appropriate fiscal year 1988 funds to continue with the construction of the WEB rural water system and Belle Fourche rehabilitation project as currently scheduled, and to conduct general investigations of other currently proposed or authorized water projects in South Dakota; and

BE IT FURTHER RESOLVED, that the Chief Clerk of the House of Representatives of the state of South Dakota forward copies of this resolution to the South Dakota congressional delegation, the Clerk of the United States House of Representatives and the Secretary of the United States Senate.

COLORADO WATER RESOURCE PROJECTS

STATEMENT OF HON. ROY ROMER, GOVERNOR OF COLORADO

ACCOMPANIED BY WILLIAM McDONALD, DIRECTOR, COLORADO WATER CONSERVATION BOARD

Senator BURDICK. Welcome to the committee, Governor.

Governor ROMER. Senator, it is good to be here.

Senator DOMENICI. Good morning, Governor.

Governor ROMER. It is Roy, R-o-y.

Senator DOMENICI. How are you, Governor?

Governor ROMER. Very good; Very good. I am pleased to be here. I very briefly would say that even though we have a change of administration in Colorado, we have a very strong support for the projects before the committee.

Also, I will just identify personally you are talking to somebody who has spent a good bit of his life irrigating in the lower Arkansas Valley, some portion on the lower slope in Deliverance County, and Victonsberg in Dove County.

I happen to know the territory that is affected by these projects and would like to briefly discuss them with the committee. Bill McDonald is with me here. He is the director of the Colorado Water Conservation Board, and there are many other witnesses to testify this morning. They will introduce themselves.

We have submitted a written statement that details our request. I would appreciate its inclusion within the hearing record.

Senator BURDICK. Without objection, it is ordered.

[The statement follows:]

STATEMENT OF THE STATE OF COLORADO

Summary of Requests

Colorado requests appropriations for the Bureau of Reclamation greater than those set forth in the President's proposed budget, as follows:

	President's Budget	Colorado's Request
	($ in millions)	
(1) Construction		
Animas-La Plata	$ 1.955	$ 6.15
Closed Basin	4.1	10.7
Dolores	11.05	20.3
Fryingpan-Arkansas	8.1	9.1
(2) Colorado River Salinity		
Construction	$19.9	$28.05
Advance Planning	0	.3
Plan formulation	.875	2.7

(3) Include funds for the on-going cooperative effort to resolve issues concerning the habitat needs of the endangered whooping crane in the Platte River,

(4) Include funds for the Stagecoach Reservoir Project under the Small Reclamation Projects Act program, and

(5) Increase funding for general investigations, particularly for the atmospheric water resources management program.

Colorado supports the President's budget request for construction on the Corps of Engineers' South Platte River, Westerly Creek, and Fountain Creek flood control projects.

Introduction

This statement is submitted by the Honorable Roy Romer, Governor of Colorado; Mr. Clyde O. Martz, Executive Director of the Colorado Department of Natural Resources; and the Colorado Water Conservation Board, which is the state agency charged with the development of Colorado's water resources.

Bureau of Reclamation (Construction Projects)

Animas-La Plata Project. This is a joint Colorado-New Mexico project designed, among other things, to address the water supply problems which confront the Indian reservations in the project area. Other components of the project will serve non-Indian populations in Colorado and New Mexico with municipal water. Finally, project water would significantly strengthen the agricultural economy of southwestern Colorado.

This past December, the United States, State of Colorado, Ute Mountain Ute Tribe, Southern Ute Tribe, and non-Indian water users in southwestern Colorado entered into an agreement settling the Tribes' long-standing reserved water rights claims, thereby avoiding costly and divisive litigation. The agreement has three major components:

(i) The delivery to the Tribes of water from the Animas-La Plata and the Dolores Projects and the quantification of additional water for the Tribes on various streams,

(ii) The establishment of Tribal development funds to assist the Tribes in making their reservations economically self-sufficient, and

(iii) The waiver by the Tribes of all of their reserved water rights claims.

A cornerstone of the final settlement agreement is the provision of water to the two Tribes from the Dolores Project, which is to be completed in 1993, and the Animas-La Plata Project, which received its first construction appropriation only last fiscal year even though it was authorized by Congress in 1968 and was to have been built concurrently with the first delivery of water to the Central Arizona Project. The additional water provided by these projects will permit the continuance of non-Indian economies dependent upon existing water supplies, while simultaneously providing the Tribes with the water they need.

In light of the importance of the Animas-La Plata Project to the settlement, the State of Colorado (through appropriations to the Colorado Water Resources and Power Development Authority), the San Juan Water Commission (New Mexico), and local Colorado water users have agreed to non-federally finance nearly 40 percent of the cost of the project. As part of the cost-sharing arrangement, the Department of the Interior committed to a 12-year construction schedule for the project. Failure to meet that schedule could unravel the settlement agreement as it pertains to two of the rivers involved.

To achieve this schedule, an appropriation of $6.15 million will be needed in FY 1988 according to information provided by the Bureau during the cost-sharing negotiations. The President's budget request seeks only $1.955 million. We ask Congress to honor the United States' commitment to this project, the Tribes, and the state by appropriating the $6.15 million needed to maintain a 12-year construction schedule.

On-Going Projects. We urge Congress to increase funding relative to that requested by the President for three other on-going projects, as set forth in the "Summary of Requests." Each of these projects would receive less funding than in the current fiscal year. Such cuts would be unduly harsh.

Furthermore, the President's proposed budget is said to be premised upon the need to accelerate the construction of projects nearing completion. Yet funding for the Dolores and Closed Basin Projects, which are about two-thirds complete, and the Fryingpan-Arkansas Project, which is already operational, would not be sufficient to maintain current construction schedules. This is contradictory to the President's own policy.

Other projects throughout the reclamation west must bear their proportionate burden in these times of fiscal austerity. We must respectfully disagree with the Administration's efforts to increase funding for a few select Bureau projects at the expense of other on-going projects.

Other Projects. We want to remind Congress that Colorado has five other authorized projects--Fruitland Mesa, San Miguel, Savery-Pot Hook, West Divide, and Narrows. In recognition of the budget constraints which the nation faces, we are not asking for funding for these projects in FY 1988. This should not, however, be taken as a lack of interest in the development of our precious water resources.

Bureau of Reclamation (Colorado River Salinity)

The seven states of the Colorado River Basin have endorsed a coordinated, basinwide approach to the reduction of salinity in the Colorado River. The salinity control units being planned and constructed by the Bureau of Reclamation are an integral component of the overall salinity control program. We would call your attention to the detailed statement being submitted on behalf of the seven basin states, acting through the Colorado River Basin Salinity Control Forum, in which statement Colorado concurs. The Forum seeks, and Colorado supports, the sums set forth in our "Summary of Requests."

Colorado is particularly concerned about the lack of funding in the President's proposed budget for the initiation of construction on the Lower Gunnison Salinity Control Unit (winter water system) and the inadequate funding which is proposed for continuing construction on the Grand Valley Salinity Control Unit. In both instances, the state and local water users have, at the Bureau's request, accomplished certain activities and prerequisites in order to enable these salinity control units to go forward.

We have met the schedules requested of us by the Bureau for its benefit. Now, the President's budget reneges on the very schedules to which we were asked to commit. We ask Congress to rectify this situation by appropriating $500,000 for the Lower Gunnison Unit and $13 million for the Grand Valley Unit. We have met our obligations. The United States should do the same.

Bureau of Reclamation (Other Programs)

Platte River Studies. Habitat for the endangered whooping crane is located on the Platte River in central Nebraska. The maintenance of that habitat has raised numerous issues concerning future water resources development in the Platte River Basin in Nebraska, Colorado, and Wyoming.

The Bureau of Reclamation, Fish and Wildlife Service, the three states, and environmental groups have been involved for three years now in a cooperative effort which seeks to resolve the issues which have arisen. Successful completion of that process will require continued funding in FY 88. We urge that the Bureau be appropriated the funds necessary for this purpose.

Stagecoach Reservoir Project. Colorado strongly supports the Bureau's Small Reclamation Projects Act program. Several Colorado projects have benefited from this program in the past and we expect to have more candidates in the future.

Of immediate interest is the Stagecoach Reservoir Project on the Yampa River in northwestern Colorado. The project sponsor has completed its application to the Bureau, fish and wildlife mitigation has been provided for, and all permits have been obtained. Furthermore, the State has appropriated $6.6 million to finance nearly half of the project's cost.

We request an appropriation in FY 88 for the total amount of the project sponsor's application. Congress has already expressed its support for this project in last year's conference committee report on the reauthorization of the Small Projects Reclamation Act. Despite that report's directive that FY 87 funds be re-programmed to the project, and despite the fact that there is an unobligated balance in that program this fiscal year, the Bureau has failed to act.

General Investigations. The President's budget proposes a 60 percent decrease in the funding for general investigations, a drastic cut by anyone's standards. The intent seems to be to bring to a halt the Bureau's planning program.

While we do not doubt that changing times justify a reduction in and reorientation of the Bureau's planning activities, a reduction as substantial as that being sought is unwarranted. We urge Congress to provide sufficient funding to maintain a viable planning program in the years ahead.

In addition, we request that funding for the atmospheric water resources management program be substantially increased for work in the Colorado River Basin. This work, which has long had Colorado's support, is of mutual interest to the seven basin states. It is a long term research and demonstration program aimed at augmenting the water supplies of the river through winter orographic cloud seeding. While reduced funding for such an effort may be expedient in the short run, it will prove to be short-sighted in the long run since the Colorado River is over-appropriated and will not be able to sustain the demands placed upon it in the future.

Corps of Engineers

The sums contained in the President's recommended budget are adequate for the timely execution and continuation of federal flood control projects in Colorado. We would caution, however, that any reduction in these budget requests would unnecessarily jeopardize the lives and properties of many thousands of Coloradans.

The President's request for the South Platte River project below Chatfield Lake will enable construction on that project to be completed. Located in the heart of the Denver metropolitan area, this is a critical flood control project. We would like to thank the committee for having helped bring this project to fruition.

We support the President's recommended budget for construction on the Westerly Creek flood control project in Denver and Aurora. This project is needed to enable local governments in the area to solve problems upstream from the proposed federal project, which would be located on Lowry Air Force Base. Those upstream problems cannot be addressed until the federal project goes forward.

Finally, we support the President's budget request for the Fountain Creek flood control project, which addresses major flood control problems in the heart of Pueblo. The solution of those problems will enable redevelopment activities which are of great importance to the economic welfare of that community to go forward.

ANIMAS-LA PLATA PROJECT

Governor ROMER. First, I am concerned that the United States has entered into an agreement. The Colorado water projects has asked us to do our part, set some timetables, but this budget doesn't permit them to keep pace with those timetables, and we would like to be specific with that.

Second, the President's budget was based upon the fact that it ought to concentrate on projects nearing completion, and there are several of those before you from Colorado, and we simply would like to say that in keeping with the President's own intention, we simply need to increase the budget which he has suggested.

First, on Animas-La Plata—Senator Domenici, of course, you are very familiar with this project. It is the cornerstone for our settlement of the Indian reserve rights claimed. We now have an agreement. This is after years of work. It is important that we continue to have support and appropriations for this project.

The appropriation which has been suggested in the President's budget of $1.9 million, we believe, does not keep pace with what they set as a timetable for the project. We believe we need the $6.15 million on Animas-La Plata. It is a very important project. It is important to both the states of Colorado and New Mexico and to all of the parties to that agreement.

SALINITY CONTROL PROJECTS

In addition, I would like to comment very briefly on the President's proposed budget regarding the Lower Gunnison and the Grand Valley salinity control units. Both of these, I think, are very important in terms of reducing salinity in the Colorado River and we do not find adequate funding for this.

We ask Congress to correct the situation by appropriating $500,000 for the start of the construction of the winter water component on the Lower Gunnison unit and $13 million for the Grand Valley unit.

DOLORES PROJECT, COLORADO

Another specific project which I would like to mention to you is the Dolores project. In addition to Animas-La Plata, it is a part of the composite of agreements that have been made in southwestern Colorado. Despite the fact that we have set forth a construction schedule which we believe requires a $20 million appropriation, the President's budget only includes $11 million, and we would respectfully request that Congress correct that and keep this project on schedule.

The basic disagreement that we have with the President's budget is that it is going in the right direction; it simply does not permit us to keep up with the timetable that they have requested that we meet.

STAGECOACH, COLO., LOAN

There is one other project that I would like to particularly mention. It is the Stagecoach loan for the project. It is a part of the Bureau's Small Reclamation Projects Act program. Congress has expressed the support for this project in last year's conference committee report on the reauthorization of small projects. Despite the report's direction that 1987 funds be programmed for the project, and despite the fact that there is an unobligated balance in that program, the Bureau has stated that.

We would like your help to inquire of the Department on the status of the project sponsors' application.

This, we hope, will go to construction this year, and it would be of very great help to us if you would give us some assistance in that regard. I would like to, Mr. Chairman, thank the committee for your support of the Corps of Engineers' flood control projects in Colorado.

Channelization of the South Platte River below the Chatfield Dam will be completed next fiscal year with appropriations sought by the President, and with the authorization of the Westerly Creek and the Fountain Creek flood control projects last year and the funding proposed in the President's recommended budget, which we support, these two flood control will be able to go forward with construction.

This is a very quick summary of these projects as they relate to Colorado. You will have a good bit more testimony from the witnesses in the room. Just let me summarize and say that all of these are tremendously important to our state. As you know, like any state in the United States, water is our lifeblood. We have cooperated with our neighboring states over a number of years.

We feel that there is a joint agreement as to what needs to be done yet for Colorado to use this water in the best way, and we would respectfully request your assistance in this year's budget that we are requesting. I would be happy to answer any questions that you have.

Senator BURDICK. Thank you for your testimony, Governor.

Senator Domenici, any questions?

ANIMAS-LA PLATA PROJECT

Senator DOMENICI. Governor, I am going to ask some questions with reference to the Department of the Interior's cooperation with the Animas-La Plata group in terms of of attempting to draft the last agreement. But I assume that either a member of the Colorado group or a member of the New Mexico Commission who came up here in an effort to get assistance would know more about the details of whether they got cooperation or not.

I am just making that assumption. Am I fair in that?

Governor ROMER. That is a correct assumption. Even though I followed those negotiations from a distance, I was not involved with them. Regarding that kind of an intimate look, you would get a more accurate response from one of the participants, since I am 2 months new to the project.

Senator DOMENICI. Governor, I just want to say that even with cost sharing, instead of it getting easier this year to get on with the projects, it appears that it may be more difficult. The approach of the Bureau is to get on with projects that are closer to being completed and finish them, which is going to put, if we adopt that that policy—and we are a long way from it—an extremely difficult damper on those that are just getting started, such as our new Animas-La Plata project.

When you look at what the Bureau is going to do, they are going to try to finish the Utah project, and the Lower Colorado has a great big project that has been kind of struggling along. The way they are doing it is taking a huge amount of money and saying, "Let's finish that," and all other projects that are not at some late state of completion are going to get deferred for a long period of time, even taking money away from some project schedules.

Senator Burdick has one of those. We also think part of the Animas-La Plata underfunding is because of that. But I personally thank you for your testimony, and I am glad to have you here.

Governor ROMER. I want just to emphasize the tremendous importance of the agreement that has been reached. It was a tough one, as you well know, Senator.

Senator DOMENICI. Absolutely.

Governor ROMER. The consequences of that not being carried out are very grave. It is difficult to communicate that to people in the East who do not understand the tremendous care with which that agreement was put together. So I would appreciate anything you can do to convince your colleagues that we have an obligation to settle those water claims with the Indians.

Senator BURDICK. Thank you, gentlemen.

Governor ROMER. Thank you very much.

PREPARED STATEMENT FROM THE GOVERNOR OF NEW MEXICO

Senator BURDICK. I also want to make part of the record a statement the subcommittee has received from the Governor of New Mexico which covers these same projects.

[The statement follows:]

STATEMENT OF GOV. GARREY CARRUTHERS OF NEW MEXICO

SUMMARY

This statement is submitted in support of appropriations for the construction and operation and maintenance of water resource projects authorized to be built by the Bureau of Reclamation and in support of appropriations for additional project investigations by the Bureau.

The President's fiscal year (FY) 1988 budget proposal for water resource projects of the Bureau of Reclamation in New Mexico and other states in which New Mexico has an interest should be increased for some projects to permit timely and efficient construction schedules and to provide measures to assure salinity control of the Colorado River in the future. Specifically, I urge that the President's budget be increased for the following projects to the total amounts listed. I fully support the President's FY 1988 budget proposal for other Bureau of Reclamation projects of interest to New Mexico.

Animas-La Plata Project	$6.15 million
San Luis Valley Project	$10.7 million
Colorado River Basin Salinity Control, Title II	$31.07 million
Dolores Project	$20.3 million
City of Alamogordo Municipal Water Supply	$200,000

STATEMENT

Colorado River Storage Project and Participating Projects

The Colorado River Storage Project Act, which became law in 1956, authorized a carefully planned and farsighted program for the development and use of waters of the Upper Colorado River Basin. To carry this program forward the President has recommended that $155.976 million, including only $1.955 million for the Animas-La Plata Project in Colorado and New Mexico and $11.047 million for the Dolores Project in Colorado, be appropriated to the Bureau of Reclamation for FY 1988.

The Animas-La Plata Project, authorized for construction as a participating project in 1968, would provide municipal and industrial water supplies for communities in New Mexico and Colorado, irrigation water supplies for use in both states and settlement of the water rights claims of the two Ute Indian Tribes in Colorado

Following intensive discussions and negotiations in 1985 and 1986, two significant agreements were reached in 1986 with respect to the construction of the Animas-La Plata Project. On June 30, 1986, a cost-sharing agreement was signed by the United States and the non-federal entities providing for construction of the Animas-La Plata Project and the sharing of the cost of that construction. On December 10, 1986, an Indian Water Rights Settlement Agreement was signed by the two Colorado Ute Indian Tribes, the State of Colorado and other affected entities in that state. With these two agreements complete, the project has moved a significant step toward construction. This project has long been delayed and its construction should be implemented by an appropriation of $6.15 million to the Bureau of Reclamation for FY 1988. I urge and support an increase in the FY 1988 budget to a total of $6.15 million for the Animas-La Plata Project.

The Dolores Project, authorized for construction as a participating project in 1968 and presently under construction, is also involved in the Indian Water Rights Settlement Agreement signed on December 10, 1986. The President's budget for FY 1988 does not include funds for continued construction of additional reaches of the Dove Creek Canal, a major feature of the project. I urge and support an increase in the FY 1988 budget to a total of $20.3 million for the Dolores Project.

I fully support the remainder of the President's FY 1988 budget proposal for the Colorado River Storage Project and participating projects.

Central Arizona Project

The Colorado River Basin Project Act, Public Law 90-537, enacted in 1968, authorized construction of the Central Arizona Project in Arizona and New Mexico. The President's FY 1988 budget proposes $191.228 million to continue construction of this project. The Hooker Dam and Reservoir unit, or suitable alternative, in southwestern New Mexico is authorized for construction as a unit of the Central Arizona Project. The President's proposed budget includes $604,000 to continue studies on this unit. I support the President's FY 1988 budget proposal for funding the Central Arizona Project.

Brantley Dam and Reservoir

The President's FY 1988 budget includes $23.264 million for continued construction on the Brantley Dam and Reservoir Project in New Mexico. The primary purpose of this project is to provide flood protection in the vicinity of the City of Carlsbad. Brantley Dam will replace the unsafe McMillan Dam which was reconstructed by the Reclamation service in 1908, and will provide additional capacity for storage of flood waters. I support the President's FY 1988 budget proposal for this project.

Velarde Community Ditch Project

The President's FY 1988 budget includes $717,000 for rehabilitation of deteriorated canal structures. I support the President's FY 1988 budget proposal for this project.

Colorado River Salinity Control Project, PL 93-320, Title I

The President's FY 1988 budget includes a total of $23.984 million for continued construction of the Yuma Desalting Plant and other salinity control facilities authorized to implement Minute 242 of the International Boundary and Water Commission. I support the President's FY 1988 budget proposal for this program.

Colorado River Basin Salinity Control, PL 93-320, Title II and Colorado River Water Quality Improvement Program

The President's FY 1988 budget includes only $19.908 million for construction of two salinity alleviation units authorized by Title II of Public Law 90-320, the Grand Valley and Paradox

Valley units in Colorado. The President's budget recommends only $875,000 for plan formulation of four additional units that would improve water quality of the Colorado River. The President's budget does not include any funds for general plan formulation including funds to maintain the Colorado River Water Quality Office, or for advanced planning of additional salinity control projects.

The Colorado River Basin Salinity Control Forum, comprised of representatives of the seven Colorado River Basin states, has carefully reexamined in great detail all of the features needed to control salinity pollution of the Colorado River and has concluded that the President's budget is not adequate to ensure that further pollution and degradation of the water quality of the Colorado River does not occur. The Forum has concluded that a total of $28.050 million in construction funding, an increase of $8.142 million over the President's budget for FY 1988, is the minimum amount essential to maintain adequate levels of salinity control. I support an increase of $8.142 million in the President's FY 1988 budget to a total of $28.050 million for construction of Colorado River Salinity Control, Title II, features.

In addition, the Forum has determined that it is very important to continue to fund the Colorado River Water Quality Office and has asked that $620,000 be appropriated in the FY 1988 budget to the Bureau of Reclamation general plan for formulation including continuation of that office. Further, the Forum urges that $350,000 be appropriated to the Bureau of Reclamation for plan formulation work in the Lower Colorado region and $1.750 million for plan formulation work in the Upper Colorado River region of the basin states. These amounts are an increase of $1.225 million to the President's FY 1988 budget. The Forum also determined that $300,000 should be appropriated for advanced planning on the Uinta Basin of Utah, an increase of $300,000 in the President's FY 1988 budget. I fully support an increase of $1.525 million to the President's FY 1988 budget to a total of

$3.020 million for plan formulation and advance planning of Colorado River Salinity Control, Title II, features.

Closed Basin Division, San Luis Valley Project, Colorado

The President's FY 1988 budget includes only $4.085 million for continued construction of the Closed Basin Division. Work will include completion of the supervisory control system, San Luis Lake Pumping Plant and Phases II and IV of the electrical transmission system. Additional funding in the amount of $6.6 million is needed to construct the water delivery features and electric power transmission facilities to enable previously constructed wells in Stage 4 to be placed in service on a timely schedule. The project will facilitate Colorado's delivery of water in the Rio Grande to downstream states and to Mexico. I support an increase of $6.6 million in the President's FY 1988 budget to a total of $10.7 million for this project.

General Investigations

The President's budget for FY 1988 does not include funds for general investigations on the Alamogordo M&I Water Supply Project, Alamogordo, New Mexico. The ongoing investigation would be terminated and without adequate funds a report of the Bureau of Reclamation investigation carried out over the past five years would not be produced. An adequate report on the Bureau's ongoing investigation is much needed by the State and local interests. I urge that at least $200,000 be included in the Bureau of Reclamation's budget for FY 1988 for the Alamogordo M&I Water Supply Project investigation.

Operation and Maintenance Program

I support the President's FY 1988 budget for operation and maintenance for the following Bureau projects in New Mexico and in adjacent states in which New Mexico has an interest; 1) Carlsbad Project, $311,000; 2) Brantley Project, $165,000; 3) Pecos River Basin Water Salvage, $350,000; 4) Rio Grande Project, $3,542,000; 5) Middle Rio Grande Project, $7,624,000; and 6) San Luis Valley Project, $1,475,000; a total of $13.517 million.

The opportunity to present this statement in support of appropriations for the Bureau of Reclamation is sincerely appreciated.

GARRISON DIVERSION UNIT, NORTH DAKOTA

STATEMENT OF HON. GEORGE A. SINNER, GOVERNOR OF NORTH DAKOTA

Senator **BURDICK**. We will now hear from the State of North Dakota and Governor Sinner, who is accompanied by Mr. Russell Dushinske, chairman, Garrison Diversion Conservancy District; Edward Lone Fight, and Ray Cross.

Governor **SINNER**. Thank you, Senator.

Senator **BURDICK**. It is good to see you this morning, Governor. Why are you late?

Governor **SINNER**. I just got in. I would like to have Mr. Cross come up. If I can, I will go through my testimony quickly so those accompanying me may present statements.

Mr. Chairman and Senator, my name is George Sinner. I am Governor of North Dakota. Thanks for giving me this opportunity to personally urge you and your committee to modify the administration's fiscal year 1988 budget proposal to recognize, to some extent at least, the federal commitment for water development in North Dakota.

You are all aware of the fact that North Dakota contributed over 500,000 acres of land for flood control reservoirs to protect the lower Missouri River states from the devastating floods. In return for the sacrifice of these lands, many of them owned by the Indian tribes, we were to receive federal assistance to develop our water resources. The Flood Control Act of 1944, better known as the Pick-Sloan Plan, contained the authorizing language which joined the upper and lower basins into a basinwide project providing mutual benefits to both areas.

It is now 1987. The lower basin states have been enjoying the benefits of the 1944 agreement for over 30 years. Over $1 billion in flood damages have been prevented in the lower basin in that period of time and millions upon millions of dollars have accrued to those states from the commercial and agricultural development of the wide expanse of flood plain now protected by impoundments in my state and other upstream states.

Today, 34 years after completion of the Garrison Dam, I appear before you to request sufficient funds to move forward with a project that is an absolute minimum when compared to the agreement of 1944. The administration's budget for fiscal year 1988 is a proposal that pits state against state and project against project, and it does it in the name of efficiency. It appears to many of us that any cost savings that would be realized by expediting the so-called priority projects would be offset by shutdown and startup penalties, increased costs due to interim inflation increases, and staff dislocations.

I believe the efficiency would be best served and the least total costs incurred by funding all projects presently under construction at that level which is within the capability of the Bureau of Reclamation to construct. In my area, the reformulated Garrison diversion project would require an increase from the administration's proposal of $2.5 million to $33 million plus an amount sufficient to fund the needs of the Indian tribes to the maximum capability of the Bureau of Reclamation forces in North Dakota.

GARRISON REFORMULATION LEGISLATION

Public Law 98–360, which was enacted July 16, 1984, was unprecedented legislation in which Congress delegated responsibility to an appointed commission to develop recommendations for project features and plans related to the Garrison project. Members of the Garrison Diversion Unit Commission came from various areas of the nation and as representatives of many different disciplines. The reformulated Garrison diversion project incorporates the recommendations of this commission.

Our request for a minimum of $33 million is fully in accord with the work of the Garrison Diversion Unit Commission, whose recommendations set in motion a chain of events involving major environmental organizations, the Bureau of Reclamation, state and local officials, and members of the Garrison Conservancy District Board.

The final recommendations of the Garrison Diversion Unit Commission restructured the project to place emphasis on municipal, rural, and industrial water supply, and wildlife benefits and decreased the irrigation from 250,000 acres to approximately 130,000 acres, including Indian acreages.

Public Law 98–360 contained language in section 207, paragraph 3(d), as follows:

> The Secretary is authorized and directed to implement the recommendations of the Commission report consistent with existing authority.

The reformulated Garrison diversion project as described in the report authorized by Public Law 98–360 consists of a project made up of the following general elements and estimated costs: Supply works and irrigation facilities, $460 million; municipal, rural, industrial water supply, $401 million; fish and wildlife, $34.5 million; flood control, $3 million; and recreation, approximately $7 million.

INDIAN FACILITIES AND FEATURES

The total remaining capital costs are $905 million. This total includes $59.4 million for irrigation projects on Indian land, where economic growth and development are desparately needed. The Indian people sacrificed a way of life when they were moved from their homelands to make room for the flood control reservoirs. Their present lands do not produce well under dry land conditions, therefore, irrigation is essential to the welfare of the tribes.

As a result of Public Law 98–360, the Secretary of the Interior received a report outlining the costs of replacement of the Indian infrastructure due to the construction of the Garrison and Oahe Dams. That report is presently on the Secretary's desk. I mention this only to indicate that there is a recognition of the losses suffered by the tribes due to the construction of the flood control reservoirs in North Dakota.

Mr. Chairman, the administration budget proposal does not reflect the primary purpose of Public Law 98–360, which was the development of a Garrison project to satisfy the contemporary water needs of the citizens of North Dakota.

The administration budget does not recognize the hundreds of hours spent in negotiations between the National Audibon Society representatives and those representing state interests to develop an environmentally acceptable answer to providing for the state's contemporary water needs.

Finally, Mr. Chairman, the administration budget fails to recognize the federal commitment to my state for its sacrifices in eliminating the major flood damage threat to the lower basin states of the Missouri.

I urgently request your favorable consideration of our request for increased funding so that the project may move forward for the benefit of all of the people of my state.

[The statement follows:]

STATEMENT OF GOV. GEORGE A. SINNER OF NORTH DAKOTA

My name is George Sinner and I am Governor of North Dakota. Thank you for giving me this opportunity to personally urge you and your Committee to modify the Administration's FY 1988 budget proposal to recognize to some extent, at least, the federal commitment for water development in North Dakota.

You are all aware of the fact that North Dakota contributed over 500,000 acres of land for flood control reservoirs to protect lower Missouri River states from devastating floods. In return for the sacrifice of these lands, many of them owned by the Indian Tribes, we were to receive federal assistance to develop our water resources. The Flood Control Act of 1944, better known as the Pick-Sloan Plan, contained the authorizing language which joined the upper and lower basins into a basin-wide project providing mutual benefits to both areas.

It is now 1987. The lower basin states have been enjoying the benefits of the 1944 agreement for over 30 years. Over one billion dollars in flood damages have been prevented in the lower basin in that period of time, and millions upon millions of dollars have accrued to those states from the commercial and agricultural development of the wide expanse of floodplain now protected by impoundments in my State and other upstream states.

Today, 34 years after completion of the Garrison Dam, I appear before you to request sufficient funds to move forward with a project that is an absolute minimum when compared to the agreement of 1944.

The Administration's budget for FY 1988 is a proposal that pits state against state and project against project and it does it in the name of "efficiency". It appears to many of us that any cost savings that would be realized by expediting the so-called "priority projects" would be offset by shutdown and start-up penalties, increased costs due to interim inflation increases and staff dislocations.

Mr. Chairman, efficiency would be best served and the least total costs incurred by funding all projects presently under construction at that level which is within the capability of the Bureau of Reclamation to construct. In my area, the Reformulated Garrison Diversion Project would require an increase from the Administration's proposal of $2.5 million dollars to $33 million dollars plus 1.9 million dollars to fund the needs of the Indian Tribes to the maximum capability of the Bureau of Reclamation forces in North Dakota.

Public Law 98-360, which was enacted July 16, 1984, was unprecedented legislation in which Congress delegated responsibility to an appointed Commission to develop recommendations for project features and financing related to the Garrison Project. Members of the Garrison Diversion Unit Commission came from various areas of the nation and as representatives of many different disciplines. The Reformulated Garrison Diversion Project incorporates the recommendations of this Commission.

Our request for a minimum of $33 million is fully in accord with the work of the Garrison Diversion Unit Commission whose recommendations set in motion a chain of events involving major environmental organizations, the Bureau of Reclamation, state and local officials and members of the Garrison Conservancy District Board. The final recommendations of the Garrison Diversion Unit Commission restructured the project to place emphasis on municipal, rural and industrial water supply and wildlife benefits and decreased the irrigation from 250,000 acres to approximately 130,000 acres including Indian acreages. Public Law 98-360 contained language in Section 207, paragraph (3)(d), as follows:

> "The Secretary is authorized and directed to implement the recommendations of the Commission report consistent with existing authority."

The Reformulated Garrison Diversion Project as described in the report authorized by Public Law 98-360 consists of a project made up of the following general elements and estimated costs: (figures rounded)

Supply Works and Irrigation Facilities	$460,000,000
Municipal, Rural, Industrial Water Supply	401,200,000
Fish and Wildlife	34,675,000
Flood Control	3,049,000
Recreation	6,850,000
Total Remaining Capital Costs	$905,774,000

This total includes $59.4 million for irrigation projects on Indian land where economic growth and development are desperately needed. The Indian people sacrificed a way of life when they were moved from their homelands to make room for the flood control reservoirs. Their present lands do not produce well under dryland conditions, therefore, irrigation is essential to the welfare of the Tribes.

As a result of Public Law 98-360, the Secretary of the Interior received a report outlining the costs of replacement of the Indian infrastructure due to the construction of the Garrison and Oahe Dams. That report is presently on the Secretary's desk. I mention this only to indicate that there is a recognition of the losses suffered by the Tribes due to the construction of flood control reservoirs in my State.

Mr. Chairman, the Administration budget proposal does not reflect the primary purpose of Public Law 98-360 which was the development of a Garrison Project to "satisfy the contemporary water needs" of the citizens of North Dakota. The Administration budget does not recognize the hundreds of hours spent in negotiations between the National Audubon Society representatives and those representing State interests to develop an environmentally acceptable answer to providing for the State's "contemporary water needs". Finally, Mr. Chairman, the Administration budget fails to recognize the federal commitment to my State for its sacrifices in eliminating the major flood damage threat to the lower basin states.

I urgently request your favorable consideration of our request for increased funding so that the project may move forward for the benefit of all the people of my State.

Bureau of Reclamation
Capability Backup Data

Project: Pick-Sloan Missouri Basin Program, Garrison Diversion Unit

Appropriation: Construction and Rehabilitation

Feature and Contract	Date of Issue	Date of Award		Additional Capability FY 1988 Federal	Additional Capability FY 1988 Non-Federal	Additional Capability FY 1988 Total
McClusky Canal						
Canal Maintenance	10/87	11/87		$ 400,000	—	$ 400,000
Lake Holmes Outlet Works	10/87	11/87		700,000	—	700,000
Survey and Drafting		Ongoing		400,000	—	400,000
Painted Woods Outlet Works	8/87	10/87		700,000	—	700,000
Oakes Test Area						
Oakes Inlet Railroad Bridge	5/87	7/87		400,000	—	400,000
Oakes Office Addition	7/87	9/87		300,000	—	300,000
Oakes Test Area Control System (Including Cable)		11/87	1/88	1,600,000	—	1,600,000
New Rockford Canal						
New Rockford Canal, Reach 2	7/87	9/87		8,100,000	—	8,100,000
New Rockford Canal, Reach 18 Lining & Drains	2/88	7/88		800,000	—	800,000
New Rockford Office Building	7/87	9/87		300,000	—	300,000
Indian Irrigation						
Indian Irrigation Fac.		Ongoing		630,000	—	630,000
Municipal, Rural & Indus. Water						
Non-Indian MR&I		Ongoing		*20,000,000	—	20,000,000
Indian MR&I		Ongoing		1,300,000	—	1,300,000
Fish and Wildlife Fac.						
Mitigation Acquisition & Development		Ongoing		3,500,000	—	3,500,000
Wetland Trust Fund		Ongoing		500,000	—	500,000
Comprehensive Studies						
Studies		Ongoing		2,370,000	—	2,370,000
TOTAL ADDITIONAL CAPABILITY				$42,000,000		$42,000,000

Note: Noncontract costs are included in the above figures.
*Must have ind[illegible]ion of write-in by July 1987 to use 20,000.

STATEMENT OF RUSSELL DUSHINSKE, CHAIRMAN, GARRISON DIVERSION CONSERVANCY DISTRICT

Governor SINNER. Mr. Chairman, I think we will let Mr. Dushinske comment next, and we will yield some time to Ray Cross and his people.

Senator BURDICK. Mr. Dushinske, I welcome you also to the committee. You are an old-time, long-time supporter of the Garrison project. We welcome you here.

Mr. DUSHINSKE. My name is Rus Dushinske, and I am chairman of the Garrison Diversion Conservancy District in North Dakota, and I, too, appreciate the opportunity to appear here before you today to urge an alteration of the fiscal year 1988 administration's budget to more adequately meet the government's commitment on the Garrison diversion project. This is also a very crafty budget attempt to cut it down to the water.

Governor Sinner has briefly reviewed some of North Dakota's sacrifices through the Pick Sloan Plan after contributing greatly to the flood control navigation and power benefits of the lower Missouri basin states. North Dakota State University has estimated these losses since the closure of the mainstream dams at over $1.5 million in 1984 dollars, which is a huge loss for a small state of 652,000 in population.

A long history of the failure to meet federal commitments of North Dakota in the 1944 and 1965 acts are well known.

In 1986, a federal commitment to erratucally reduce the project was reaffirmed when the Garrison Reformulation Act was passed as a compromise supported by the state, the administration, and major state and national environmental groups.

With the ink barely dry on the compromise agreements and the Reformulation Act, the budget now proposes to provide not the $42 million that should be available for fiscal 1988, or even the $33 million appropriated for 1987, but rather, to practically discontinue the projects with a caretaker appropriations level of only $2.5 million and the main hope of again restoring a large measure of financing in fulfillment of a federal commitment at some unpredictable time in the future.

We believe this highly destructive stop-start method of development not only fails to meet the mandate of the 1986 Reformulation Act, but also creates serious losses and inefficiencies.

The Governor read to you one paragraph. Among the North Dakotans impacted through permanent flooding of Pick-Sloan dams, the losses suffered by Indian reservations upon the Fort Berthold and Standing Rock Reservations were inordinately severe. This is partially recognized in the report of the GDU Commission and the Reformulation Act, which authorizes $67,910,000 for the development of 17,580 acres of irrigation upon the two reservations and $20.5 million for municipal, rural, and industrial water systems.

The conservancy district believes that the appropriation of $42 million is justified for fiscal 1988. It most strongly urges that at least a minimum 1988 appropriation equal to the $33 million to be appropriated for fiscal 1987 be available.

It further urges that an additional sum of $1.9 million be appropriated for the necessary study and design of irrigation and municipal, rural, and industrial water systems on the Indian reservations as authorized by the 1986 Reformulation Act.

Finally, our district strongly opposes the reprograming of large portions of the 1987 funding, which we hear that the Bureau of Reclamation is considering. Again, thank you for the opportunity to present these requests.

STATEMENT OF EDWARD LONE FIGHT, CHAIRMAN, THREE AFFILIATED TRIBES OF THE FORT BERTHOLD INDIAN RESERVATION

Mr. DUSHINSKE. Now, Mr. Chairman, I am going to call on Ed Lone Fight from Newton, who represents all of the affiliated tribes, Fort Yates, and Fort Totten.

Ed?

Mr. LONE FIGHT. Thank you. First of all, I would like to publicly thank the Governor of North Dakota for giving the tribes that are affected by the GDU the opportunity to present testimony. I have with me Ray Cross, the tribal attorney for the three affiliated tribes to my left.

Mr. Chairman, members of the committee, my name is Edward Lone Fight and I am the chairman of the three affiliate tribes of the Fort Berthold Indian Reservation. I am pleased to appear before your committee today so I can present a joint statement of all the Indian tribes that are to be served by the features of the Garrison diversion unit [GDU] project. I have been authorized by the Standing Rocks Tribe and the Devils Lake Sioux Tribe to urge this committee to restore the funding in the fiscal year 1988 Bureau of Reclamation budget for GDU to the level of $34.9 million. The restoration of this funding is important to the implementation of the authorized Indian features of this project on the Standing Rock Reservation and the Devil's Lake Sioux Reservation.

The Garrison Reformulation Act, Public Law 99–294, authorized substantial irrigation and municipal, industrial, and rural [MIR] water development projects on the above identified Indian reservations.

These projects, if implemented, would provide great public health, environmental, and economic benefits to the three affiliated tribes, as well as other tribal people intended to be served by the Garrison project.

The congressional committee report accompanying the Garrison Reformulation Act recognizes that the Indian tribes sacrificed over 200,000 acres of prime bottomland as the sites for the Garrison and the Oahe Reservoirs in the Pick-Sloan program. The committee report concludes that the purposes of these authorized Indian projects in the Garrison Act is to partially compensate the Indian tribes for the adverse social and economic impacts of the Pick-Sloan program on the affected tribal people.

The administration's budget for fiscal year 1988 Garrison funding would dash the tribal people's hope for the prompt and realistic implementation of the Indian features of this project.

It is also important to remember that the Garrison Reformulation Act represents a significant compromise between all contending groups regarding the fiscal, environmental, and equitable aspects of the project.

Further, the Indian tribes involved recognize their share of responsibility in the cost-effective and realistic implementation of these Indian projects for the benefit of their tribal people.

This means that limited federal project funds must be stretched so that as many tribal people as possible may be served by the MIR and other project development on the reservations.

Significant cost savings in the utilization of these limited federal project funds are possible if the Bureau of Reclamation would utilize, where feasible, private firms to design and construct the Indian features of the project.

The Bureau of Reclamation would obtain the ultimate oversight authority over these projects to ensure that appropriate quality is achieved in the design and construction of the supervised projects. The cost savings generated by this method means that more Indian people could be served with the limited project funds available.

Based on the foregoing, the Three Affiliated Tribes, the Standing Rock Sioux Tribe, and the Devil's Lake Sioux Tribe urge this committee to restore Garrison funding at least to the level of $34.9 million.

Mr. Chairman, this concludes my written testimony. However, I would like to have included in the record certain additional written testimony and documents that I will offer on behalf of the Standing Rock Sioux. I would be happy to answer any questions the committee has.

Thank you.

Senator BURDICK. Without objection, it is so ordered.

[The information referred to follows:]

STATEMENT OF STANDING ROCK SIOUX TRIBE

Dear Chairman Johnston:

The Standing Rock Sioux Tribe respectfully urges your Appropriations Subcommittee on Energy and Water Development to restore FY88 Bureau of Reclamation funding for the Garrison Diversion Project to FY87 levels.

Restoration of FY88 Garrison Diversion funding to the FY87 level of, at least $33 million, will enable the Tribe to implement Indian Projects authorized by P.L. 99-294 (the Garrison Diversion Unit Reformulation Act of 1986). P.L. 99-294 authorizes the Secretary of the Interior to construct, operate and maintain a Municipal, Rural and Industrial (MR&I) water system on Standing Rock, Fort Berthold and Fort Totten Reservations and develop 2,380 acres of Irrigation on the Standing Rock Indian Reservation.

These projects when fully operational will provide substantial public health, economic and environmental benefits to the Tribal members and residents of the Standing Rock Indian Reservation.

To facilitate implementation of P.L. 99-294 Indian Project features, the Standing Rock Sioux Tribe has completed the necessary preliminary investigations for the MR&I System and Irrigation Development and are attached for your review.

Mr. Chairman, the Standing Rock Sioux Tribe would greatly appreciate your consideration to restore FY88 Garrison Diversion Funding to, at least, the FY87 level, plus an appropriate sum for Indian Projects for a total amount of not less than $35.4 million.

Your consideration of our request will be most appreciated.

CAPABILITY STATEMENT
STANDING ROCK SIOUX TRIBE
GARRISON DIVERSION UNIT
FY 1988 APPROPRIATION
MARCH 30, 1987

Abstract:

Development of municipal, rural, industrial and irrigation water systems by the Standing Rock Sioux Tribe was authorized by P.L. 99-294. The Standing Rock Sioux Tribe demonstrates capability, for FY 1988, federal appropriation of $2.100 million for MR&I development and $2.010 million for irrigation development. Funds will be used primarily for construction of facilities for which planning has been completed by the Tribe, and for further planning in accordance with P.L. 99-294.

I. INTRODUCTION

The Standing Rock Indian Reservation is located in south central North Dakota and north central South Dakota. The Reservation is an agriculture dependent community, with livestock raising and grain farming the primary economic activities.

The livelihood of the residents of the Standing Rock Reservation includes residence in the outlying communities of the area. However, an adequate domestic water supply is often lacking in the communities, and on individual ranch homesites. From the need for quality domestic water, and for similarly adequate water supplies for livestock, the Standing Rock Sioux Tribe has developed a plan for a comprehensive Municipal, Rural and Industrial (MR&I) water system for the Reservation.

The Standing Rock Sioux Tribe also seeks to further economic development on the Reservation through more efficient use of land, water and human resources. Irrigation development is one avenue toward this development. The Tribe is constructing irrigation facilities on the most available and desireable locations at this time, and is proceeding with study of further development throughout the reservation.

The Garrison Diversion Unit Reformulation Act of 1986 (P.L. 99-294) provides specifically for MR&I and irrigation development on the Standing Rock and other Indian Reservations. This appropriation request has been prepared under the authorization of the Garrison Act and is a positive, well planned step toward the objectives stated.

To best utilize existing contracting procedures, provide fiscal audit responsiblity, and parallel ongoing development at Standing Rock the Standing Rock Sioux Tribe requests that the funds be directed to the tribe under authority provided in PL 93-638 by contract with the Bureau of Indian Affairs.

The Standing Rock Sioux Tribe capability for FY 1988 appropriations is as follows:

1.	For municipal, rural and industrial (MR&I) water system Priority #1 design and construction, and total project planning	$2,100,000.00
2.	For irrigation development including completion of the Eagle Unit project	2,010,000.00
	Total FY 1988 Capability	$4,110,000.00

The Standing Rock Sioux Tribe supports the combined GDU appropriation requst. The amount finally determined appropriate for the Standing Rock Sioux Tribe will be applied to support tribal objectives with the stated capability.

Figure 1 graphically describes the capability scheduled for FY 1988 planning and construction.

II. MUNICIPAL, RURAL AND INDUSTRIAL WATER SUPPLY

A. The Need:

The availability of a plentiful and high quality water supply is vital to the health and well being of those living on the Standing Rock Reservation. The level of health and quality of life of the general population is directly related to the quality of their domestic water supply. Many residents currently depend on poorly constructed or low capacity individual wells or have water hauled to underground cisterns. These sources are often contaminated with bacteria or undesirable minerals, provide an inadequate quantity of water, and are costly to maintain and operate.

Water quality has been a continuing problem on the Standing Rock Reservation. The tribal council has noted many instances where health concerns have been raised because of poor domestic water sources. Housing programs on the reservation have been constrained because of the lack of good quality water and the costs of developing water for an individual rural home. A comprehensive rural water system will provide the tribal members with the necessary water at a cost lower than that of developing a number of individual systems.

Agriculture is the primary industry on the Standing Rock Reservation and the key to the full development of this industry is water. Livestock water is currently obtained from individual wells, small streams, lakes, stock dams, or dug-outs. During drought-periods these sources often dry-up and livestock must be be sold or moved off the reservation. As a result, the grazing lands can not be fully utilized and a valuable resource is wasted. The lack of stability in the production of feeder cattle also discourages related industrial development such as packing plants, cattle feeding, and canneries.

B. The Project:

The proposed total project includes service to all communities, home sites, ranch headquarters, and pasture lands within the Standing Rock Reservation which includes Sioux County in south central North Dakota and Corson County in north central South Dakota as well as portions of Dewey and Ziebach Counties in South Dakota (2.3 million acres). It would serve a projected Indian population of 13,450 and non-Indian population of 3,838 at 1,206 individual and 18 community service locations. The proposed facilities include a Missouri River intake and pumping station and a water treatment plant near Kenel, a ground storage reservoir and booster pumping station north of McLaughlin, storage reservoirs near Cannon Ball, Thunder Hawk, and Porcupine, as well as 290 miles of core pipeline and 1,360 miles of distribution pipeline. The map shown in Figure 2 shows the location of the principal project facilities and the communities served. The estimated future peak-day water usage of the system is estimated at 3,500,000 gallons per day. The estimated cost of the total project is $42 million.

C. Service to Cannon Ball:

The construction schedule proposed is to build the basic supply facilities and the six service area branches in a phased program over a period of seven or eight years. Construction Priority #1 will be to build a pumping station and the portion of the total system core pipeline from Ft. Yates to Cannon Ball. This will allow delivery of water to Cannon Ball from the present intake and treatment facilities at Ft. Yates. After the basic supply facilities, additional core pipeline, and a standpipe are constructed in a subsequent phase, service to Cannon Ball and supplemental supply for Ft. Yates will be from the new water treatment plant.

Service to Cannon Ball has been given highest priority by the Tribal Council because of the acute need for a safe, high quality supply at that location. The present supply is plagued by high iron and manganese levels which stain plumbing fixtures and deteriorate piping, as well as high sulfate levels which cause severe odor problems and have a laxative effect on some people. The high iron and manganese levels make it difficult to maintain a safe chlorine residual throughout distribution system and can lead to serious outbreaks of water borne diseases.

III. MR&I CONSTRUCTION PRIORITY #1

A. Present Cannon Ball Water Supply Facilities:

Cannon Ball's present water supply consists of a single well, 252 ft. deep, with an approximate capacity of 40 gallons per minute. Other facilities include distribution piping and a 76,600 gallon standpipe. Approximately 154 homes are served and the present average day usage is estimated at 69,000 gallons with peak day usage at 138,000 gallons. Future water usage is projected to be 112,000 gallons per average day and 224,000 gallons per peak day. Problems associated with the present facilities include frequent service interruptions and water quality problems associated with high iron and manganese, bacteria, and sulphate levels.

The service interruptions are primarily due to a reliance on a single, low capacity well. This well has difficulty producing a sufficient quantity of water to meet even the average day needs of the community. If demands exceed the amount the well is able to produce or if mechanical failure of the pump or motor occurs, a service outage results leaving the community without water for consumptive use or sanitation needs.

The frequent service interruptions and high iron and manganese levels combine to produce a potential for a widespread and severe outbreak of water-borne disease in the community. As in most similar water systems, chlorine is added to destroy any bacteria present in the supply and to provide a residual level of chlorine in the water throughout the distribution system to kill any bacteria that might enter the distribution system from outside sources. The un-oxidized iron and manganese in the Cannon Ball supply combine with the residual chlorine, depleting it and removing this defense against outside bacterial contamination. During service outages, the pressure in the distribution mains drops down to zero or even to a negative pressure in some locations allowing polluted groundwater to infiltrate into the main through leaking joints. These occurrences also increase the possibility of a back-siphonage of water into the common distribution system from plumbing, fixtures, lawn taps, washing machines, etc. within the individual home, with obviously serious consequences.

Other problems are associated with high iron, manganese, and sulphate levels. Iron and manganese are considered nuisance chemicals as they cause deposits in water distribution mains and service lines and reduce their economic life and leave stains on plumbing fixtures and light-colored clothes. Iron causes red or reddish-brown deposits and stains. Manganese stains and deposits are black or gray. High sulphate levels impart a bitter taste to the water and have a laxative effect on persons unaccustomed to the water.

Alternative solutions to the proposed system are generally not available or economically feasible. Groundwater supplies are difficult to locate in an adequate quantity in this area. If a well of sufficient capacity can be constructed, the quality of the water is usually similar to or worse than the present Cannon Ball well. Surface water from the Missouri River adjacent to Cannon Ball is available in abundance but the costs associated with constructing and operating a river intake, pumping, and treatment facility are prohibitive. The proposed Construction Priority #1 is an ideal solution in that it provides much needed water to Cannon Ball in a relatively short period of time through a combination of new and existing facilities and after subsequent construction phases it becomes a part of the total MR&I system serving the rest of the reservation. Thus, this project not only meets the short-term needs of Cannon Ball but also is part of the long-term solution for water supply to the entire reservation.

B. Project Description:

The proposed Construction Priority #1 consists of a water delivery main pipeline from Ft. Yates to Cannon Ball, a pumping station at Ft. Yates, and metering and control facilities at the delivery point in Cannon Ball. These facilities are shown in Figure 3.

The purpose of the pumping station is to overcome pipeline friction losses and elevation differences between Ft. Yates and Cannon Ball. Further engineering studies will be needed to determine the best location of this station but it is anticipated that it will be directly west of Ft. Yates and near Highway 24.

The pipeline delivery system will consist of approximately 15 miles of 8-inch main from Ft. Yates to the future standpipe site and 9 miles of 6-inch main from there to Cannon Ball. A final determination of the size, material, route, and pressure class for this line will be made during the preliminary engineering design phase for the total system project. It is anticipated that the pumping and delivery system will be sized to provide a minimum flow of 160 gpm to Cannon Ball which will constitute a daily delivery capacity in excess of the projected peak day needs of 224,000 gallons.

After the basic supply facilities and additional core pipeline and a standpipe south of Cannon Ball have been constructed, the mainline from Ft. Yates to Cannon Ball will become part of the total reservation supply system. The size, class, and hydraulic characteristics of this line will be matched to the characteristics of the total system facilities. The metering and control facilities at the delivery point in Cannon Ball will continue to be used in the same manner; however, the pumping station at Ft. Yates will be adapted to serve as a metering point for delivery of water to Ft. Yates from the total system and as a rechlorination facility for water continuing on into the system north of Ft. Yates. The engineering planning required to efficiently coordinate the phased construction of these facilities will be done as part of the preliminary engineering design of the total system. As will be seen in a later section, this will require that the total system preliminary engineering design be completed before final design of Construction Priority #1 can begin.

C. Construction Cost Estimate:

An estimate of the cost of Construction Priority #1 described in the previous section is detailed in Table 1. Construction costs are based on bid costs for recent similar projects. A contingency fund of 30% of the estimated construction cost was also included to insure that sufficient funds are available if the scope of the project is increased or if construction costs are higher than those estimated.

D. Development Schedule:

The individual tasks that will need to be accomplished to complete Construction Project #1 include environmental requirements, geology and geo-technical studies, hydrology investigations, engineering, and finally, construction and operation. These tasks and the respective budget amounts are listed in Table 2. A summary of the scope of each of these tasks is as follows:

1. Environmental Requirements:

Minimum environmental effects are anticipated. The preparation of an Environmental Assessment is planned and it is anticipated that a FONSI will be the final step.

In order to protect cultural resources Class I and II surveys will be done by qualified archaeologists in the various construction areas. Construction activities will then be governed by the findings of these surveys.

2. Geology and Geo-Technical Studies:

It is anticipated that subsoil investigations will be performed at the pumping station site for the purpose of developing building foundation designs.

3. Hydrology Investigations:

Consumptive water use studies and an estimate of delivery system loss has already been completed. Water quality trace element studies are not appropriate for a closed conduit delivery system of the type to be constructed in this project.

4. Engineering:

Before beginning the development of construction drawings and specifications for Construction Priority #1, more detailed studies of various portions of the project will need to be completed. Service location points, individual water use figures, preliminary routing of branch lines, field investigations to select possible intake, treatment, storage, and pumping sites, and related tasks will need to be completed. After completing these initial steps a general design concept and project scope and sequence will be determined which will serve as a guide in the subsequent stages and determine the nature and sequence of the phased construction steps.

The next step will be project-wide in scope and will include the sizing of the intake, treatment, storage, and pumping facilities as well as the core pipeline throughout the project. This initial project-wide effort will be necessary to insure that the Construction Priority #1 facilities are designed with adequate capacity to deliver water to each of the subsequently constructed branches.

After the overall facility sizing has been completed, development of detailed construction drawings and specifications for the Construction Priority #1 facilities will proceed. This will be followed by the assembly of bid documents, a bid letting, contract negotiations, preconstruction matters, and then construction. Other phases will be initiated as funding becomes available and will follow a similar sequence.

E. Total System Cost Summary:

A cost summary for the various components of the total system is provided in Table 3 and 3A. Table 3 uses costs developed in the Feasibility Study report prepared by DeWild Grant Reckert and Associates in October of 1985. Table 3A shows costs for the same components as estimated by the Bureau of Reclamation.

IV. IRRIGATION BACKGROUND

A. Present Irrigation at Standing Rock:

The Standing Rock Sioux Tribe is developing irrigation as a tribal enterprise on the Standing Rock Reservation. The objective of irrigation development is to maximize economic returns to the Tribe from land, water and human resources.

The Ft. Yates irrigation unit has been operational for three crop years. During this time, the Tribe has developed irrigation expertise and has demonstrated their ability to produce a variety of crops. As an example, the 1986 irrigated corn yield for one tested area at Ft. Yates was 199 bushels per acre. The 1986 average corn yield for the Ft. Yates unit was approximately 165 bushels per acre. Crop production at this level requires careful management of farming techniques and irrigation water application.

The Standing Rock irrigation development includes application of new technology to minimize production costs and maximize production. Among the features included is use of moderately low pressure sprinklers to minimize energy use while maintaining adequate water distribution. Also used at the Standing Rock sites are computer based water management and sprinkler operation equipment which aid in proper application of irrigation water.

B. Irrigation Potential at Standing Rock:

The Standing Rock Sioux Tribe has available land and water resources to develop additional irrigation. Field inspections by the U.S. Soil Conservation Service within the southern half of the Standing Rock Reservation in 1985 identified over 1.5 million acres of potentially irrigable land. A similar study on tribal lands in the northern half of the reservation will be completed by 1994.

Within the total irrigable land base of the reservation, the Standing Rock Tribe has identified specific areas for initial irrigation development. The first site developed was the Ft. Yates unit. The second site, the Eagle Unit, is presently under construction, but additional funding is needed for completion. Other sites totaling 5,482 acres have been identified, but require further study including detailed soil survey prior to addition planning.

C. Eagle Unit Irrigation Site:

The newest area of irrigation development at Standing Rock is the Eagle Unit, shown on Figure 4. The site is located approximately eight miles northwest of Mobridge near the Wakpala community. The Grand River bay of Lake Oahe is adjacent to the site and is the water source.

Phase 1 of the Eagle Unit is development of 1,375 acres of irrigated area west of the Grand River. The area includes tribal land and allotted trust lands which are under lease by the Tribe.

Phase 2 of the Eagle Unit will include development of land east of the Grand River. The two areas will share a common pumping station and intake. Approximately 300 acres of allotted trust land have been identified for development.

Completion of Phase 1 of the Eagle Unit is the highest priority for irrigation development at Standing Rock at this time. The reasons for the priority are:

1. The site has been examined for irrigability, including soil surveys, and found suitable.
2. Financial analyses of the Eagle Unit has been completed and the project will provide a net benefit to the Tribe, and environmental reviews are complete.
3. A portion of the construction is already in place and completion will be cost-effective at this time.

V. EAGLE UNIT COMPLETION

A. Existing and Proposed Project Facilities:

The Eagle Unit project includes an intake and pumping station on Lake Oahe, pipeline and center pivot machines. A portion of the project, including four center pivot machines irrigating 463 acres, was constructed during 1986. The 1986 construction also includes the pumping station and main pipelines. Figure 4 is a location map of the area.

The Eagle Unit intake and pumping station is located on an abandoned railroad bridge adjacent to the site. This unique location was chosen to provide access to the deepest part of the reservoir, without construction of expensive underground intake pipelines. The pumping equipment is installed in pump "pairs", with submersible pumps in the lake to lift water to the bridge elevation and in-line booster pumps to provide pressurization for pivots. Two pump "pairs" were installed in 1986. Four more "pairs" are needed to complete the station.

The main pipeline to the Phase 1 irrigated area, approximately 2.5 miles of 30-inch diameter steel pipeline, was installed in 1986. In addition, PVC distribution pipeline to four center pivot machines has been installed. Approximately 2.5 miles of additional PVC pipeline, size 8, 10 and 12 inch diameter, is needed to complete the project.

Four center pivot machines, without corner irrigation attachments, were installed in 1986. These four machines will irrigate 463 acres. Nine additional machines, plus six corner irrigation attachments, are needed to complete Phase 1 of the Eagle Unit. The total project will provide irrigation for 1,375 acres.

The Eagle Unit is located in an area without heavy commercial electrical facilities. For this reason, a portion of the project cost is for construction of new high voltage electrical facilities. The 1986 construction included approximately four miles of underground power lines and associated transformers and switches. Completion of the project will require approximately 7 additional miles of power line and additional transformers.

B. FY 1988 Construction:

In accordance with the high priority on completion of the Eagle Unit, the Standing Rock Tribe is requesting FY 1988 appropriations for completion of the Eagle Unit. With timely funding, the Tribe can complete the Eagle Unit in time for operation during the 1988 growing season, but any delays in funding will result in operation for the 1989 season.

Figure 3 illustrates the new areas which will be irrigated and the new pipeline required. In addition to the irrigation machines and pipeline, pumping station and electrical facilities will be needed. A listing of the proposed construction items is included on Table 4.

C. FY 1988 Budget:

The estimated costs for FY 1988 construction are given on Table 4. Included are all construction costs and appropriate allowances for engineering, rights-of-way, administration and contingencies.

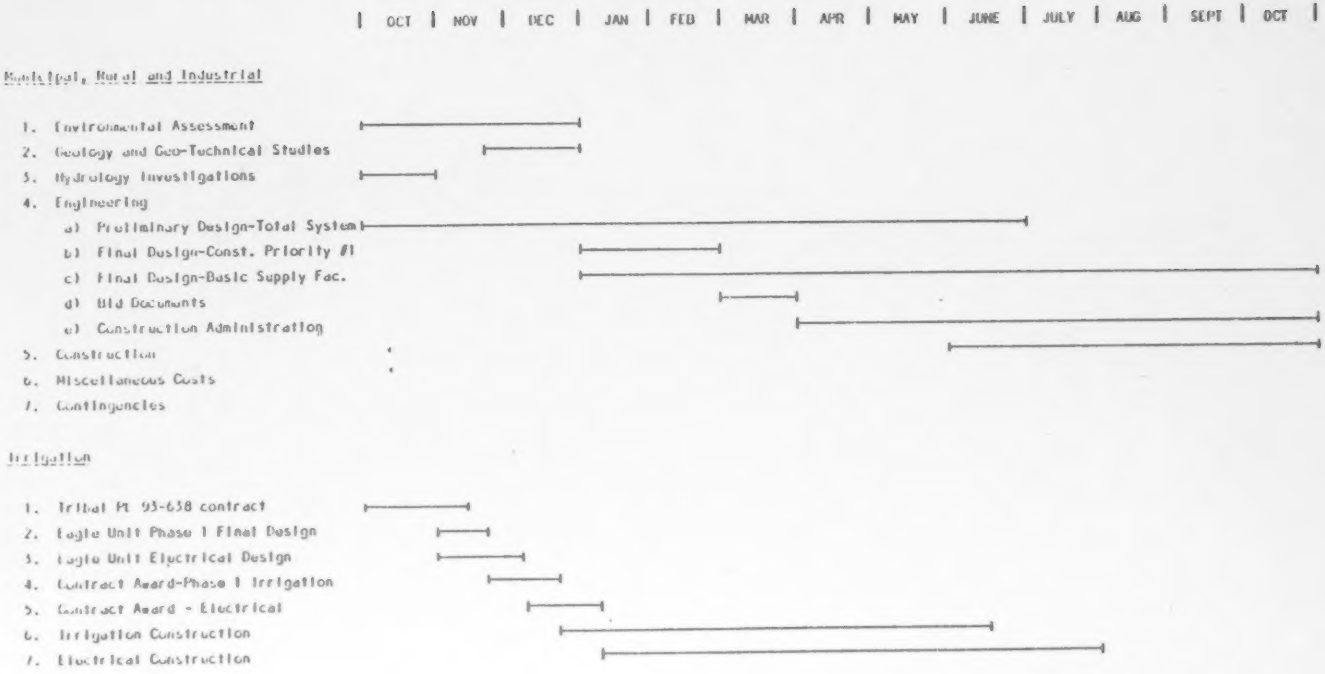
This appropriation is needed in FY 88 to complete the Eagle Unit for 1989 crop season irrigation. Operation of the entire Eagle Unit is necessary to achieve the economy of scale required for profitable irrigation operation.

D. Schedule:

Design of the additional irrigation facilities needed to complete Phase 1 is presently finished, and the Phase 1 completion can be bid as soon as funding is available. Design of electrical facilities will be completed in time to bid new electrical facilities for 1988 construction.

FIGURE 1

STANDING ROCK SIOUX TRIBE
GARRISON DIVERSION UNIT
FY 1988 SCHEDULE



Cash Flow ($)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
1. Municipal, Rural and Industrial	64,000	62,000	105,000	69,000	69,000	106,000	66,000	66,000	337,000	289,000	289,000	289,000	289,000
2. Irrigation	5,000	60,000	30,000	30,000	355,000	400,000	500,000	500,000	100,000	30,000			
Total Cash Flow	69,000	122,000	135,000	99,000	424,000	506,000	566,000	566,000	437,000	319,000	289,000	289,000	289,000

TABLE 1

STANDING ROCK SIOUX TRIBE
CONSTRUCTION PRIORITY #1
SERVICE TO CANNON BALL
ESTIMATED COST

Item No.	No. of Units	Description	Unit Price	Total Cost
1.	79,500 L.F.	8" water main, per lin. ft.	$ 6.00	$477,000
2.	47,700 L.F.	6" water main, per lin. ft.	$ 4.00	$191,000
3.	Job	Miscellaneous appurtenances (20% of pipe price), lump sum	$ L.S.	$134,000
4.	Job	Cannon Ball metering and control facility, lump sum	$ L.S.	$ 30,000
5.	Job	Ft. Yates Pumping Station, lump sum	$ L.S.	$100,000
		Total Estimated Construction Cost	$ 932,000	

Other Costs:

Environmental Assessment	$ 25,000
Geology and Geo-Technical Studies	$ 30,000
Hydrology Investigations	$ 2,000
Engineering:	
Preliminary Design-Total System	$ 266,000
Final Design-Construction Priority #1	$ 30,000
Final Design-Basic Supply Facilities	$ 342,000
Development of Bid Documents	$ 40,000
Construction Administration	$ 80,000
Miscellaneous Costs (land, R.O.W., Easements, Legal, etc.)	$ 73,000
Total Estimated Other Costs	$ 888,000
Contingencies	$ 280,000
Total Estimated Project Cost	$2,100,000

TABLE 2

STANDING ROCK SIOUX TRIBE
CONSTRUCTION PRIORITY #1
SERVICE TO CANNON BALL
DEVELOPMENT SCHEDULE AND BUDGET

	Task	Completion Date	$1,000's Budget
1.	Environmental Assessment	12-01-87	25
2.	Geology and Geo-Technical Studies	12-01-87	30
3.	Hydrology Investigations	12-01-87	2
4.	Engineering:		
	a. Preliminary Design - Total System	12-01-87	266
	b. Final Design - Construction Priority #1	3-01-88	30
	c. Final Design - Basic Supply Facilities	10-31-88	342
	d. Development of Bid Documents	4-01-88	40
	e. Construction Administration	10-31-88	80
5.	Construction	10-31-88	932
6.	Miscellaneous Costs		73
7.	Contingencies		280
	Total		2,100

TABLE 3

STANDING ROCK SIOUX TRIBE
BREAKDOWN OF PHASED CONSTRUCTION COSTS
BASED ON DGR 1985 REPORT COST ESTIMATE
(MILLIONS OF DOLLARS)

	Basic Supply Facilities	Wakpala Branch	Solen Branch	Little Eagle Branch	McIntosh Branch	Southwest Branch	Thunderhawk Branch	Final WTP Cost	Total
Core Pipeline	$1.16	$0.49	$1.70	$1.81	$1.60	$1.11	$ .74	$-0-	$ 8.61
Branch Lines	0.10	0.36	1.00	0.79	1.95	2.31	3.01	-0-	9.51
Miscellaneous	0.25	0.17	0.54	0.52	0.71	0.68	0.75	-0-	3.61
Services	0.03	0.11	0.28	0.22	0.22	0.15	0.19	-0-	1.20
Storage	0.63	-0-	0.25	-0-	0.18	-0-	0.14	-0-	1.20
Intake/Treat/Pump	3.65	-0-	-0-	-0-	-0-	-0-	-0-	1.20	4.90
Total Construction	$5.83	$1.13	$3.76	$3.35	$4.66	$4.25	$4.83	$1.20	$29.03
Other Costs	1.46	0.28	0.94	0.84	1.17	1.06	1.21	0.30	7.25
Contingencies	1.17	0.23	0.75	0.67	0.93	0.85	0.97	0.24	5.80
Total Project Cost	$8.45	$1.63	$5.46	$4.85	$6.76	$6.16	$7.00	$1.74	$42.08

TABLE 3A

STANDING ROCK SIOUX TRIBE
BREAKDOWN OF PHASED CONSTRUCTION COSTS
BASED ON BUREAU OF RECLAMATION COST ESTIMATES
(MILLIONS OF DOLLARS)

	Basic Supply Facilities	Wakpala Branch	Solen Branch	Little Eagle Branch	McIntosh Branch	Southwest Branch	Thunderhawk Branch	Final WTP Cost	Total
Pipe Cost (Misc. & Serv.)	$2.20	$1.60	$4.90	$4.80	$6.00	$5.90	$6.60	$-0-	$32.00
Storage	0.88	-0-	0.33	-0-	0.25	-0-	0.20	-0-	1.66
Intake/Treat Pump	2.77	-0-	-0-	-0-	-0-	-0-	-0-	0.88	3.65
Subtotal	$5.85	$1.60	$5.23	$4.80	$6.25	$5.90	$6.80	$0.88	$37.31
10% Unlisted 25% Contingency	2.15	0.60	1.97	1.80	2.25	2.20	2.40	0.32	13.69
Construction Cost	$8.00	$2.20	$7.20	$6.60	$8.50	$8.10	$9.20	$1.20	$51.00
Indirects 30%	2.00	0.70	2.00	2.00	2.60	2.40	2.90	0.40	15.00
Project Cost	$10.00	$2.90	$9.20	$8.60	$11.10	$10.50	$12.10	$1.60	$66.00

TABLE 4

FACILITIES COST ESTIMATES
EAGLE UNIT IRRIGATION PROJECT
STANDING ROCK SIOUX TRIBE

Phase 1, Eagle Unit:

		Units	Unit Price	Extension
A.	Pipeline:			
	1. 12" Class 160 PVC	2,500 ft.	$ 11.50	$ 28,750.00
	2. 10" Class 160 PVC	4,950 ft.	9.00	44,550.00
	3. 8" Class 160 PVC	5,320 ft.	7.00	37,240.00
	4. Valves and misc.	L.S.	33,500.00	33,500.00
B.	Pumps and Pumping Station:			
	1. 250HP/120HP pump pairs	3 pr.	36,000.00	108,000.00
	2. 75HP/50HP pump pairs	1 pr.	18,000.00	18,000.00
	3. Secondary electrical	L.S.	175,000.00	175,000.00
	4. Valves and fittings, ea. pump	4 ea.	8,000.00	32,000.00
	5. Controls	L.S.	45,000.00	45,000.00
C.	Center Pivot Machines:			
	1. Full length machines	7 ea.	36,000.00	252,000.00
	2. Reduced length machines	3 ea.	28,500.00	85,500.00
	3. Corner attachments	6 ea.	22,500.00	135,000.00
	4. Controls & attachments	10 ea.	8,500.00	85,000.00
	5. Secondary electrical	10 ea.	7,400.00	74,000.00
D.	Primary Electrical:			
	1. Buried wire	29,500 ft.	3.80	112,100.00
	2. Cabinets & switches	L.S.	42,000.00	42,000.00
	3. Distribution transformers	4 ea.	6,500.00	26,500.00
	4. Substation transformers	1 ea.	65,000.00	65,000.00
	5. Substation switching	L.S.	100,000.00	100,000.00
E.	Unlisted Items:	15% of Construction		225,000.00
	Subtotal, Phase 1 Construction			$1,723,640.00
F.	Other Costs, Phase 1:			
	1. Engineering, irrigation			$ 25,000.00
	2. Engineering, electrical			35,000.00
	3. Tribal indirect costs			25,000.00
	4. Tribal project coordinator			30,000.00
	5. Miscellaneous and contingency			170,000.00
	Total Project Cost, Phase 1			$2,008,640.00
			Rounded	$2,010,000.00

RESOLUTION

NO. 51-87

WHEREAS, the Standing Rock Sioux Tribe (hereinafter referred to as the "Tribe") is an American Indian Tribe recognized by the Secretary of the Interior with a Constitution duly approved on April 26, 1959, by the Assistant Secretary of the Interior, under which the Standing Rock Sioux Tribal Council (hereinafter referred to as the "Council") is the governing body of the Tribe, and

WHEREAS, the Standing Rock Sioux Tribal Council, pursuant to the Amended Constitution of the Standing Rock Sioux Tribe, Article IV, Section(s) 1(a), 1(b), 1(c), 1(g), 1(j), 1(m), 1(o) and 1(q), is empowered to protect and represent the Tribe's interests, property and rights of all tribal members, and

WHEREAS, pursuant to P.L. 99-294 (the Garrison Diversion Unit Reformulation Act of 1986), the Secretary is authorized to (1) construct, operate, and maintain such municipal, rural and industrial water systems as he deems necessary to meet the economic, public health and environmental needs of the Fort Berthold, Standing Rock and Fort Totten Indian Reservations, at a cost of not more than $20.5 million dollars and (2) to develop irrigation (2,380 acres) within the boundaries of the Standing Rock Indian Reservation in the amount of $7,910,000, and

WHEREAS, it is understood and recognized that the Indian Projects authorized by P.L. 99-294 represent partial compensation for adverse social and economic impacts associated with the implementation of the Missouri River Basin Pick-Sloan Program (1944 Flood Control Act), and

WHEREAS, the Administration's FY88 proposed funding level of $2.5 million for Garrison Diversion to meet requirements of P.L. 99-177 (the Gramm-Rudman-Hollings Balanced Budget and Emergency Deficit Control Act) will substantially impact and unnecessarily delay P.L. 99-294 Indian Projects.

NOW THEREFORE BE IT RESOLVED, that the Standing Rock Sioux Tribal Council hereby strongly urges the Congress, through its Appropriations Subcommittee on Energy and Water Development, to restore Garrison Diversion Project funding to, at least, the FY87 level, plus an appropriate sum for Indian Projects for a total amount of not less than $35.4 million dollars.

BE IT FURTHER RESOLVED, that the Chairman is hereby authorized and instructed to transmit to the appropriate Congressional Delegation the Tribe's request.

BE IT FURTHER RESOLVED, that the Chairman and Secretary of the Tribal Council be authorized and instructed to sign this resolution for and on behalf of the Standing rock Sioux Tribe.

We, the undersigned members of the Standing Rock Sioux Tribal Council, do hereby grant tentative approval to the attached resolution which urges the restoration of Garrison Diversion Project funding.

A Whitelightning

Whitney Standing Crow, Sr.

Pat Kelly

Elliott Rhodes

Earl Silk

Virgil Taken Alive

CONCLUDING REMARKS

Senator BURDICK. Governor and members of the panel, I want to recognize that you have been part of the force in North Dakota and have worked with us for many, many years. I want to tell you that you have considerable support on this committee. It seems ironical that the flooding in the Missouri and the Mississippi has been coming because of the mainstream leaks on the Missouri River, principally.

We have been told there are wide regions of the country for which we should have some compensation. We have not received it. I know you have many here that believe you should receive it. We hope that this year, you will be able to make some advances and get our money.

Governor SINNER. Thank you, Mr. Chairman. I think I should probably note for the record that you probably predate everyone here except with the possible exception of us on this project, and I want the record to show that we are very grateful to that reference.

Senator BURDICK. Thank you very much for your testimony.

ANIMAS-LA PLATA PROJECT, COLORADO AND NEW MEXICO

Senator DOMENICI [presiding]. Could we proceed, then? I am going to preside for the next 30 minutes. Senator Burdick has another obligation.

We are going to talk now a little bit about the Animas-La Plata project. I understand that Congressman Campbell is here.

Where is the Congressman? Would you please step forward, Congressman, and if you don't mind, can we bring up the representatives of the various groups?

PREPARED STATEMENT OF SENATOR ARMSTRONG

Before you proceed, Congressman Campbell, I want to make part of the record a statement from Senator Armstrong.

[The statement follows:]

STATEMENT OF SENATOR WILLIAM L. ARMSTRONG

THE ANIMAS-LA PLATA PROJECT

I thank the Chairman of the Senate Subcommittee on Energy and Water Development, Senator Johnston, and the Subcommittee members for their support and understanding of the unique problems facing the States of Colorado and New Mexico with regard to the settlement of Indian water rights in southwest Colorado and the continuing Animas-La Plata Project.

Adequate funding of the Animas-La Project is necessary for the federal government to honor its commitments in the Colorado Ute Indian Water Rights Final Settlement Agreement and in the Colorado River Basin Project Act of 1968.

Animas-La Plata Project History

The Animas-La Plata Project is one of the Upper Colorado River Basin projects authorized in the Colorado River Basin Project Act of 1968 ("Basin Act"). The Basin Act is integral to the basinwide approach to development of the Colorado River. The apportionment of the water of the Colorado River is based on (1) the treaty between the United States and the Republic of Mexico, (2) the Colorado River Compact, (3) the Upper Colorado River Basin Compact, (4) the United States Supreme Court opinion in Arizona v. California, 373 U.S. 546 (1963) and, finally, (5) the Colorado River Basin Project Act of 1968.

The Basin Act is a complex river agreement, the result of long and complicated negotiations. Pursuant to this 1968 law, construction of authorized Upper and Lower Basin water projects was to move forward simultaneously, providing both Upper and Lower Basin states with the capability to store and use their precious water resources.

Even though the law contains express provisions to insure that basinwide development of the Colorado River does not proceed in a piecemeal fashion, Upper Basin projects have been short-changed. The five authorized Upper Basin projects were to be completed before Arizona diverted water from the Central Arizona Project. Delivery of water from the Central Arizona Project began in December, 1985. Meantime, only two of the Upper Basin projects are under construction, and Animas-La Plata is still in the design stage. All of the states in the Colorado River Basin have an obligation to see that the Upper Basin states are treated fairly and in accordance with the Basin Act.

The Animas-La Plata Project fulfills two broad public interest objectives: (1) it helps to fulfill the federal government's obligation to assure the Upper Basin States' fair share of Colorado River water, and (2) it makes it possible to achieve a final Indian water rights settlement with the Ute Mountain and Southern Ute Indian tribes.

The Animas-La Plata Project will provide municipal, industrial and agricultural water for southwest Colorado. That area includes the city of Durango, the Ute Mountain and Southern Ute Indian Reservations and rural LaPlata County. The Project also will provide water for northwest New Mexico, including the cities of Farmington, Aztec and Bloomfield, surrounding rural areas, and portions of the Navajo Reservation near Shiprock.

The Animas-La Plata Project has a history of earnest and active local support. The tremendous ability of the people of southwestern Colorado and their nearby neighbors in New Mexico to work together on this project is demonstrated by the Colorado Ute Indian Water Rights Settlement Agreement which was negotiated over the last two years and signed December 10, 1986.

Indian Water Rights Settlement

The Animas-La Plata water project is the lynchpin in the Colorado

Ute Indian Water Rights Final Settlement Agreement. The Ute Mountain and Southern Ute Indian Tribes' water rights claims were filed by the United States in December, 1976 on more than 25 streams in southwest Colorado. The Settlement quantifies the water rights claims of the tribes, and extinguishes all future claims under the Winters Doctrine.

The key to the Indian water rights settlement is the storage provided by the Animas-La Plata Project. Without the storage, the tribes' water rights cannot be quantified without devastating non-Indian water rights of the region.

Being able to quantify Indian water rights due to water storage anticipated with the Animas-La Plata Project culminates ten years of costly litigation, and two years of complicated negotiations among a variety of parties, including the Ute Mountain and the Southern Ute Indian tribes, the area's agricultural and municipal water users, the states of Colorado and New Mexico, and the Departments of Justice and the Interior. The result is a win-win situation for all involved.

The Colorado Ute Indian Water Rights Final Settlement avoids a suit against the United States for a substantial breach of trust in the handling of Indian water.

This comprehensive Settlement addresses pending state court issues and all controversies regarding the administration of these water rights. The administration of tribal and nontribal water rights is integrated in a cooperative and responsive manner.

Water from the Animas-La Plata Project will mean the Ute Mountain Utes will no longer have to haul drinking water to their reservation. The Settlement includes funds appropriated by the Colorado state legislature for the construction of a much needed domestic pipeline to the Town of Towaoc on their reservation.

The Southern Ute population has doubled in the last ten to twelve years and an increasing number of tribal members are wanting to return to the reservation. This settlement will provide needed water for agricultural and economic development to support these increasing populations.

The Settlement will preserve the amicable and cooperative relationships and friendships long valued among the Indian and non-Indian communities in southwest Colorado.

Cost Sharing

This historic agreement also provides for substantial cost-sharing by the state and other nonfederal parties in construction of the Animas-La Plata Project.

However, it is imperative that the federal funding commitment be honored to prevent the collapse of the negotiated settlement. The Department of the Interior committed to a twelve-year construction schedule for the project, which is integral to the cost-share agreement.

The two tribes, the local water users and the States of Colorado and New Mexico and the Department of Justice proceeded in good faith to produce a cost-share plan that includes contributions for both Animas-La Plata Project construction and for tribal development funds. On June 30, 1986, their cost-share commitments were found by the Secretary of the Interior to meet the cost-share requirements set out by Congress in Section IV of Public Law 99-88. The nonfederal contributions to the tribal development funds also satisfy the administration's demand that nonfederal parties contribute to Indian water rights settlement costs.

This cost-share plan was conscientiously developed during a time when other parties throughout the country are either resisting or seeking to dismantle the concept of local contribution to federal projects.

The total cost of the Settlement, including construction of the Animas-La Plata Project and contributions to tribal development funds, is $572.8 million -- $512.3 million for construction of the Animas-La Plata Project and interim project facilities and $60.5 million for contribution to tribal development funds. Through a combination of cash contributions and assumption of costs of specific project features, nonfederal contributions will total $212.2 million, approaching 40% of the total cost.

The $60.5 million in tribal development funds will allow the tribes the means for putting their newly acquired water to use. Of the $60.5 million, the State of Colorado will contribute $11 million. Of the $11 million, Colorado already has contributed $6 million to construct the pipeline to the Town of Towaoc on the Ute Mountain Ute Indian reservation.

This Agreement is a tribute to the spirit of cooperation of the tribes and the water users, the States of Colorado and New Mexico and the federal government, and their ability to recognize and solve a seemingly insurmountable problem.

Accelerated Repayment to the Federal Government

The cost-share agreement provides a further advantage to the federal government. Repayment will occur within thirty years instead of the customary fifty years. That further reduces the overall cost of the project.

In conclusion, adequate funding of the Animas-La Plata Project is a belated step toward meeting the Congressionally required simultaneous development of the Upper and Lower Basin States' water projects. In addition, funding of the Animas-La Plata Project affirms the good faith proceedings of all the parties involved in reaching the Colorado Ute Indian Water Rights Final Settlement Agreement. Finally, completion of the Animas-La Plata Project will trigger accelerated repayment of the project, and realize revenues to the federal government.

STATEMENT OF HON. BEN NIGHTHORSE CAMPBELL, U.S. REPRESENTATIVE FROM COLORADO

Senator DOMENICI. Congressman, you may proceed.

Mr. CAMPBELL. If I could name a few of the people, Chris Baker from the Southern Ute Indian tribe will be here at the table, Mr. Chairman.

Senator DOMENICI. Chris Baker. Would you please step forward?

Mr. CAMPBELL. John Murphy, the president of the Animas-La Plata Water Conservancy District; Ernest House, the chairman of the Ute Mountain Union Tribe in Colorado; Joe Reed and John Humphries, who are local farmers in that district affected by the Dolores Project, and also concerning the Animas-La Plata.

Also, Manuel Hastings, who is the San Juan member of the New Mexico Water Commission; and Thomas Colbert, the president of the Marcos Water River District and Montezuma County Commission.

Senator DOMENICI. Where is Tom?

Why don't we borrow one of these chairs, Tom, so you can sit right over there by Mr. Hastings.

Thank you. We welcome you and we welcome all of the representatives of the various associations, and in particular, we welcome the chairman of the Southern Ute and the Ute Mountain tribe.

Chairman Baker and Chairman House, let us proceed.

I do want you to know that because of other events, we only have about 15 minutes to make our presentation. So you will know, the most important part of this is not how much we say here, but what we get in the record. You surely don't have to convince the Senator from New Mexico.

Mr. CAMPBELL. I am sure.

Senator DOMENICI. Nonetheless, it is important that you have your opportunity to testify before this committee. There is growing support to give our commitment here. I would like to have you all tell us as briefly as you can, your feelings about what you think we ought to do from the standpoint of those who have worked diligently this last year to try to put something together. It wouldn't hurt if we also had a summary of how much has gone into getting this project ready.

Mr. CAMPBELL. Thank you, Mr. Chairman. I think Governor Romer outlined the general apprehension we have in Colorado about the Animas-La Plata project. Certainly, we have works in the Third Congressional District out there, and some people will testify to them, including the Dallas Week project, the Dolores project, the Stagecoach project, and the Fountain Creek and Cosel basin projects.

I would like to maybe just say a couple of words about the Animas-La Plata project, because I live just a few miles from there, and I represented that district for 4 years in the state legislature and now as a Congressman from the Third Congressional District in Colorado.

As you know, this is a project that we feel is long overdue, because it was authorized in 1968, the same time as the Central Arizona Project.

Senator DOMENICI. Right.

Mr. CAMPBELL. We have moved toward cost sharing and we believe that we have done the very best we can in coming up with local help, state help, and certainly, the commitment the Indian tribes have made, too. We now feel that the support of over 38 percent of the total cost of the project, which is roughly $212 million out of the total of $535 million, is committed through the efforts that we have done in Colorado.

We are concerned that if we do not get the $6.2 million funding necessary this year, it will not comply with the 12-year agreement which the federal government has agreed to. Certainly, I don't have to tell you how good a project this is for the area coming from country yourself out there.

Certainly, it is good for not only users in the states, but the Indians, too, who prefer to negotiate a settlement to the expense of litigating them. I will submit complete testimony for the record, Mr. Chairman, but I know we are short of time. I also believe that Senator Tim Worth will be submitting a statement here, too, since he could not be here with us.

Senator DOMENICI. Both will be made a part of the record.

[The statement follows:]

STATEMENT OF CONGRESSMAN BEN NIGHTHORSE CAMPBELL OF THE THIRD CONGRESSIONAL DISTRICT OF COLORADO

I am Congressman Ben Nighthorse Campbell of the Third Congressional District of Colorado. Thank you for providing me an opportunity to testify on behalf of the following projects of importance to Colorado.

As I appear before you for the first time let me say I do not envy you the task ahead. You have many projects and limited finances. I appear before you today to convince you of those worthy of your funding.

I particularly urge your consideration of the Animas-La Plata Project for southwestern Colorado and northern New Mexico. This Committee's past interest in this Project is deeply appreciated. I have a special interest in Animas-La Plata. In fact, my home is about 25 miles from the Project. As a state representative in the Colorado legislature serving the area for four years as the area's Congressman, I am keenly aware of the need for Animas-La La Plata and the benefits to be derived from the Project.

Animas-La Plata would safeguard our limited water supply for agricultural, municipal and industrial purposes. It is the critical component of a historic agreement between the federal government, the States of Colorado and New Mexico, and Indian and non-Indian water users respecting division of water rights and the settlement of longstanding and difficult Indian reserved water rights issues. Most important, however, appropriation of sufficient funds to firmly establish Animas-La Plata would at last begin fulfillment of a commitment the Congress made in authorizing the project nineteen years ago.

Opponents of the Project would have you believe it is an unwelcome government investment. Nothing could be further from the truth.

I quote to you from a letter signed by the New Mexico and Colorado Congressional delegations which was sent to Secretary of the Interior Hodel March 18, 1986, conveying to the Secretary the Agreement in Principle, the basic framework for the eventual Final Settlement Agreement of which Animas-La Plata is the cornerstone:

> It (the Agreement in Principle) achieves a final and comprehensive settlement of the Winters water rights claims of the two Tribes, resolution of breach of trust claims of the Tribes against the United States, and a sharing of costs of the Dolores and Animas-La Plata Projects.
>
> In spite of the fact that the Animas-La Plata Project should have been constructed entirely with Federal funds under Congress' original authorization, the two States have compiled a cost-sharing/financing proposal that is reasonable. It is within their capacity to execute. It is unique and innovative to conform to the unique conditions inherent in the Indians' water rights settlement and the construction of the project to effectuate it. It is equitable because it fulfills the trust responsibilities of the Federal government to the two Tribes. It will save the Federal government many millions of dollars in litigation costs. This agreement will avoid payment by the Federal government of multi-millions of dollars in damage claims to both Indians and non-Indians in southwest Colorado in the event

> litigation were to be decided against the Federal government. An adverse court settlement is a strong probability according to many attorneys who cite experience in other lawsuits on similar issues.

The fact that all elected federal representatives from the States of Colorado and New Mexico signed this letter demonstrates the apolitical and broad based support for construction of the Animas-LaPlata Project.

When I ran for the State Legislature, as well as when I ran for Congress, I attended meetings from grange halls to city halls and the Animas-La Plata Project was always an item of discussion. In all my election campaigns, I ran in unqualified support of the Project. I am before you as someone who was elected because my constituents thought I could assist in making the Animas-La Plata Project a reality.

My constituents support federal funding at $6.2 million for fiscal year 1988 for the Animas-La Plata project. This amount of money is the optimum amount necessary to comply with a twelve-year construction schedule. The written agreement for the non-federal financing of the project executed by the federal government commits the Bureau of Reclamation to a twelve-year construction program for the project. The United States cannot meet this commitment, which is also part of the comprehensive settlement of the southwestern Colorado Indian tribes reserved water rights claims, to which, as I have previously referred, the United States is also a party, without this level of funding.

Let me also remind you as you make your tough choices that the non-federal support for this Project is not merely vocal; not just lip service. In meeting the cost sharing mandate of your 1985 Supplemental Appropriations Bill, the non-federal entities have agreed, with the approval of the Secretary of Interior, to pay $212 million dollars of the total project cost, or 38%. Surely that is the strongest signal of state and local support we can ask for.

Animas-La Plata is a good project. It is good for the people who desperately need a reliable and long term water source. It is good for the Indians whose water rights have been ignored for so many years. Animas-La Plata would make those rights a reality. It is good for the federal government, not only in terms of cost savings, but in terms of finally honoring its longstanding commitment to this project.

Next, let me turn my attention to the Dolores Project. This praiseworthy water storage project is over two-thirds completed. The Bureau of Reclamation has recommended a $20 million allocation to keep the Dolores Project construction on schedule. Unfortunately, the President's budget asks for just $11,047,000. There is no valid reason for limiting funds and delaying what heretofore has been a model project. I request you to grant the Bureau's recommendation so that construction can be finished in a timely and efficient manner.

I would also like to take this opportunity to express my support for, and urge your favorable consideration of, appropriations for the Dallas Creek and San Luis Valley Closed Basin water projects. The President's proposed funding for the Dallas Creek Project, FY1988, is $11.345 million. I support that proposed level of funding for this project. The San Luis Valley Closed Basin water project, which is so vital for a large portion of my district, is three-fifths completed. The proposed FY1988 funding level, $4.085 million, is less than half what was appropriated for FY1987, which was $10.640 million. Funding at the 1987 level would more appropriately achieve the desired purpose of completing substantially completed water projects in the near future.

I wish now to direct the Committee's attention to consideration of funding for the Bureau of Reclamation construction loan program reauthorized by Congress last year, P.L.99-546. One project in my district that is dependent upon the continuance of sufficient funding of this program is the Stagecoach Project. I urge this committe to encourage the Department of Interior to send the loan program applications to the Hill for consideration, and in anticipation of approval of projects such as Stagecoach by the Secretary and Congress, provide adequate funding in the 1988 budget for the program. Federal funding delays would jeopardize the private and state financing of Stagecoach that has occurred in reliance upon the loan program.

With respect to appropriations for salinity control projects, let me just state my support of the appropriation request of the Colorado River Basin Salinity Control Forum, which is submitting separate detailed testimony. I, however, direct your particular attention to appropriations for two projects of interest to me and my consituency. I urge your favorable consideration of an appropriation of $500,000 to initiate construction of the Lower Gunnison Salinity Control Unit and an appropriation of $13 million for the Grand Valley Salinity Control Unit in order to enable that program to stay on construction schedule. Local interests have, at the Bureau of Reclamation's request, readied themselves to participate in both of these units based on the Bureau's construction schedules.

I also encourage your support of continued funding for operation and maintenance of substantially completed or completed Bureau of of Reclamation projects. Such funding would directly affect the longstanding Fryingpan-Arkansas water project which services my district, as well as similar projects around the country.

In the Corps of Engineers' portion of the President's budget request is $2.5 million for the Fountain Creek project in Pueblo, Colorado. I ask that you maintain the level of funding in the President's request so that this important flood control project, which includes 25% cost sharing from the community, can begin construction in a timely fashion.

I would appreciate your favorable consideration of the projects and programs I have mentioned in this testimony. With particular respect to Animas-La Plata and Dolores Projects, the merits of these projects are well known to you based on your past allocations. I urge your support for future funding which is realistic and fair.

STATEMENT OF JIM DYER, STATE REPRESENTATIVE FROM COLORADO

Senator DOMENICI. Who would you like to proceed next, Congressman?

Mr. CAMPBELL. I think I will just ask Representative Jim Dyer, who represents the four corners state area legislature.

Senator DOMENICI. All right, Representative, we are glad to have you here. Would you make your statement as brief as possible, and if you have anything in writing that you don't get to say, we will make it part of the record.

Mr. DYER. I have a written one, too, but I just want to say for the citizens of the 49th District that this is very important to us. Whether we are miners or loggers or ranchers or farmers or townfolk who depend on tourism, this Animas-La Plata project and Dolores project are essential to the totality of our economy.

As Congressman Campbell pointed out, the 1986 agreement among the tribes, states, districts, and towns of our area is, in fact, historic and does, in fact, solve these Indian claims for this water. I think we are down to it now. We have had plenty of lawyers litigating. It is time to put real people to work building a real dam, and I would urge the Congress to favorably consider full funding, $6.2 million, for the Animas-La Plata this year and $20.3 million for the Dolores.

Thank you, sir.

[The statement follows:]

STATEMENT OF JIM DYER, COLORADO STATE REPRESENTATIVE

I am Jim Dyer, State Representative to the Colorado General Assembly from the 59th Legislative District, and I am here to urge your continued support of the Animas-La Plata Project.

When I returned from the Marines, I decided to make my home in southwest Colorado. At that time I began to understand the devastating problem of cyclical water shortages in our semi-arid region. Believe me, if you have witnessed a dry year, it is easy to appreciate our sustained enthusiasm for water storage projects such as the Animas-La Plata. Without an established source of water, the agricultural economy of our area will go under. I am speaking of families whose ancestors homesteaded the land and whose children have been forced to leave and find work elsewhere because dry land farming offers only marginal farming conditions.

The Animas-La Plata Project will benefit not only farmers but also the City of Durango. Durango will benefit directly by receiving 2,500 acre-feet of municipal water from the Project. Additionally, Durango will benefit from the Indian Water Rights Settlement Agreement which is an integral part of the Project. The Settlement Agreement significantly reduces the possibility that Florida River water, a major source of city water, will be curtailed in the summer.

As a matter of fact, almost every portion of the four-county area I represent will be benefited by the Project even though all areas may not receive water. The agreement with the two Colorado Ute Indian Tribes on their reserved water rights allocations gives non-Indian water users confidence that their water appropriations are valid and not subject to an earlier reserved right call. This concept is basic to the growth and prosperity of southwest Colorado.

You should be aware that Colorado is doing its part to contribute to the success of the Project and the Settlement Agreement. Colorado House Bill 1158 passed out of Committee and should be ready for consideration before the entire House shortly. This bill appropriates the state's share of tribal economic development funds and honors the commitment made by the state of Colorado to the tribes as a part of the Final Settlement Agreement. The Bill represents the State's ongoing commitment to the Animas-La Plata Project.

I know full well that limited government resources are called upon to support many worthwhile programs. Nonetheless, I hope you will grant the $6.2 million funding request for the Animas-La Plata Project. It is imperative that the water resources of southwestern Colorado be safeguarded for future use, and that the Indian citizens in our area have their water rights claims quantified.

Thank you for your time and your continued assistance to the solution of water problems in the Four Corners area.

PREPARED STATEMENT OF SAN JUAN WATER COMMISSION

Senator DOMENICI. Thank you very much.

Mr. CAMPBELL. I would like Mr. Ernest House, who is the chairman of the Ute Mountain Tribe, to testify.

Senator DOMENICI. I wonder if we might, Congressman, before we hear from our two Indian chairmen, permit Manual Hastings to testify on the New Mexico side and then spend the remainder of the time on the Indian issue.

Before you testify, I understand that the mayor of Bloomfield, Mayor Toliver——

Mr. HOUSE. R.T. Toliver; yes, sir.

Senator DOMENICI [continuing]. Who is the chairman of the San Juan Water Commission, has sent us a letter indicating the efforts that have gone forth on behalf of unifying on the New Mexico side and entering into the various agreements. He suggested, as you will, that the Animas-La Plata project is absolutely necessary for a viable economy in San Juan County, indicating that there is now basic support, and urges that we proceed with dispatch.

I will have his letter made part of the record, and now we would be glad to hear from you as a representative of the commission.

[The statement follows:]

STATEMENT OF SAN JUAN (N. MEX.) WATER COMMISSION

Dear Mr. Chairman:

Please accept this letter as evidence of the continued support of the San Juan Water Commission for the Animas LaPlata Project. The San Juan Water Commission is a cooperative association formed under the New Mexico Joint Powers Agreements Act for the purpose of enabling the County of San Juan, the cities of Aztec, Bloomfield and Farmington and the independent Water Users Associations in the County to provide funding for, and to provide a unified voice in support of, the Animas LaPlata Project. This letter is therefore sent on behalf of all such entities.

The Animas LaPlata Project is an absolute necessity for a viable economy in San Juan County, New Mexico. The cities, the county, and the water users must have storage for both irrigation water and municipal and industrial water in order to avoid periods of drought which are fatal to a stable economy. Numerous studies have shown that the Animas LaPlata Project is the only feasible way to provide storage of water for the residents of San Juan County.

It should be noted also that the residents of San Juan County have at least indirectly supported and contributed financial assistance to the Animas LaPlata Project for many years as power users from the Colorado River Storage Project.

Congress passed Public Law 90-537 in 1968 wherein it pledged to build upstreet dams, including the Animas LaPlata Project, as a part of the Colorado River Storage Project Act (Public Law 84-485, 1956) to keep New Mexico's share from being lost to downstream users. All of the participating entities in the Animas LaPlata Project have gone the extra mile and assumed extraordinary financial burdens to meet the the requirements of cost sharing imposed by the United States Government in order to make this Project possible.

The Congress is respectfully urged to continue to meet its commitment by approving legislation needed to implement the various settlement agreements and to provide the appropriate funding for the Animas LaPlata Project.

STATEMENT OF MANUEL HASTINGS, MEMBER OF FARMINGTON, N. MEX., CITY COUNCIL, AND SAN JUAN WATER COMMISSION

Mr. HASTINGS. Thank you, Senator.

Senator DOMENICI. I feel a little strange having you here today being the only New Mexican on this panel.

Mr. HASTINGS. As you know, the oil and gas industry in our area is kind of flat, and we think by extending this funding from the $1.89 million as presently budgeted to $6.2 million would help to get some more jobs in our area generated and get this project in a timely manner to go forward as we feel that we have been treated as a stepchild in relation to Arizona and some of the other projects.

I would say that if we would have had $1.3 billion spent in our economy in New Mexico, we would be in a lot better shape, as other states have had. We feel that the costs of the amounts of money that are already budgeted for other states and and other projects are at the expense of the Animas-La Plata project.

We request that we get a greater share of that portion of money that has been spent on these projects, being distributed, a greater part of it, to get this project going. We have yet to see that we have had the interests at large for this project, but we feel now that we are unified in our legislative bodies to come up with the laws necessary for the Indian rights as well as all of us in New Mexico.

We are part of the puzzle, and without pieces all being put together in which we are a vital part, and we have a committee to perform upfront cost sharing. We appreciate being here and hearing us today and for your past support, also. Thank you.

Senator DOMENICI. Thank you very much. Chairman House, did you wanted to proceed first or with Chairman Baker?

STATEMENT OF CHRIS BAKER, CHAIRMAN, SOUTHERN UTE INDIAN TRIBE

Mr. HOUSE. Go ahead, Mr. Baker.

Senator DOMENICI. Chairman Baker, you may proceed.

Mr. BAKER. Thank you. My name is Chris Baker, chairman of the Southern Ute Indian Tribe. Today, I have with me Mr. Leonard Birch, one of the council members of our tribe.

Leonard, would you stand?

Senator DOMENICI. We are glad to have you here, Mr. Birch.

Mr. HOUSE. I am here to speak on the Animas-La Plata project in southwest Colorado. The information provided by the Bureau of Reclamation has indicated that in order to meet the 12-year development construction schedules, the project requires an appropriation of $6.2 million in fiscal year 1988. The President's budget requests for fiscal 1988 is less than $2 million, a shortfall of over $4 million.

Without full funding we will be denied the planned and promised 12-year construction schedule. Indian people are no strangers to government givers. You will notice that I said government givers. It is not Indian givers anymore. [Laughter.]

Broken treaties and promises plague our history. The Southern Ute Indian Tribe has been negotiating in good faith and with honor. The President's budget request does not meet the commitment of the federal government, and quite frankly, we are disappointed by the federal government's treatment of the southern Colorado Ute tribes.

It is up to this committee to make certain that the federal government respects the obligations which it commits to as recently as December 1986 by signing the Colorado Indian water settlement agreement.

Therefore, I request that this committee endorse an allocation of $6.2 million in construction moneys to the Animas-La Plata project. Something that I may add here is that during the negotiations period, there was a lot of give and take. The Indian people and the non-Indians were working together. They banded together.

I am sure that you have heard about that; that you understand what we went through. It was the cowboys and Indians once again from southern Colorado getting together.

But I think I said that wrong. It should be the Native Americans and the cowpersons getting together. [Laughter.]

I appreciate the opportunuity to speak with you today and the support we have received from this committee in the past. We want to thank you for your assistance in meeting obligations of the federal government in the Southern Ute Indian Tribe.

Senator Domenici. Thank you very much, Mr. Chairman.

[The statement follows:]

STATEMENT OF CHRIS A. BAKER, CHAIRMAN, SOUTHERN UTE INDIAN TRIBE

I am Chris Baker, Chairman of the Southern Ute Indian Tribal Council accompanied by Leonard C. Burch, Tribal Council Member. I have been here many times before to request you to help my people by allocating money for the much needed Animas-La Plata Water Project. When I came before you in other years, I despaired of achieving the Project. It seemed impossible that the varied water interests of southwest Colorado would be able to resolve our water issues among ourselves. Through a long and difficult negotiations process undertaken with good will and determination by both Indians and non-Indians, we were able to conclude a Final Settlement Agreement which resolves the Indian reserved water rights claims. As you must be aware, the Animas-La Plata Project resolves not only the Indian water rights claims but also a broad range of water problems including water augmentation for projected municipal growth and a shortage of irrigation water for our non-Indian farmer neighbors. The Animas-La Plata Project is widely viewed as an example of the pioneer concept of neighbor helping neighbor for the benefit of all.

That is the good news.

The bad news is that the President, through his FY 88 budget request, threatens to go back on the commitments made by the federal signers of the Final Settlement Agreement. The federal negotiators agreed that they would support a funding level for the Animas-La Plata Project which would assure a twelve-year construction schedule. The Bureau of Reclamation has indicated that in order to meet the twelve-year schedule, the Project requires an appropriation of $6.2 million. The President's budget requests less than $2 million, a shortfall of over four million dollars. Without full funding for FY '88, we will be denied the promised twelve-year construction schedule.

Indian people are no strangers to "government givers." Broken treaties and promises plague our history. The Southern Ute Indian Tribe entered into the settlement negotiations in good faith and with honor. The President's budget request does not meet the commitment of the federal government. Quite frankly, I am sorely disappointed by the federal government's treatment of the Southern Colorado Indian tribes. It is up to this committee to make certain that the federal government respects the obligations which it committed to as recently as December, 1986. Therefore, I request that this committee endorse an allocation of $6.2 million in construction monies for the Animas-La Plata Project.

I appreciate the opportunity to speak with you today and the support we have received here in the past. Thank you for your assistance in meeting obligations of the federal government to the Southern Ute Indian Tribe.

STATEMENT OF ERNEST HOUSE, CHAIRMAN, UTE MOUNTAIN UTE INDIAN TRIBE

Mr. HOUSE. Mr. Chairman, members of the committee, my name is Ernest House. I am the chairman for the Ute Mountain Ute Indian Tribe in Colorado. My purpose here this morning is to seek appropriations for the Dolores project and also the Animas-La Plata. I am asking $20.3 million for Dolores, which the administration has requested $11 million, and for the Animas-La Plata appropriation of $6.2 million—administration has included oly $1.9 million for that project.

On December 10, 1986, there was a historical event in the state of Colorado. Two Indian tribes, the state of Colorado, the Departments of the Interior and Justice, and local water users in Colorado came together at a table and came up with the Ute Indian water rights settlement agreement.

I can see where this is going to help the Indian tribes in three ways. One, it resolves a long-standing clash between federal and state water rights that we are working on that we could go to the state for litigation.

Two, it creates opportunity for the dying economy that we have down in the Southwestern area.

Third, the agreements represents significant accomplishments of integrating the state and federal waters laws so we have it. With those three areas that we work on, hopefully, we can accomplish with the money that this committee will give us. I thank you very much for this time.

[The statement follows:]

STATEMENT OF ERNEST HOUSE, CHAIRMAN, UTE MOUNTAIN UTE INDIAN TRIBE

The purpose of my statement is to seek appropriations of 20.3 million dollras for the Dolores Project (rather than the President's proposed appropriations of 11.05 million dollars) and 6.15 million dollars for the Animas-La Plata Project (rather than the President's proposed appropriation of 1.95 million dollars). The increase in the Animas-La Plata appropriation is specifically required to permit a twelve (12) year construction schedule to commence with respect to that project. The twelve year construction schedule was agreed to by the United States as a part of the December 10, 1986 Colorado Ute Indian Water Rights Settlement Agreement. That Agreement was entered into by the United States, the State of Colorado, the Ute Mountain Ute Indian Tribe, the Southern Ute Indian Tribe, and a large group of local water users in Southwest Colorado.

These appropriations will be utilized to finance the federal portion of two water projects needed to provide water to implement the December 10, 1986 Settlement Agreement. The projects are required to permit water to be supplied to the Tribes without interrupting non-Indian water users. These appropriations will allow the Ute Mountain Ute Indian Tribe and the Southern Ute Indian Tribe under the supervision of the Secretary of the Interior to develop their Reservation economies. The State of Colorado has already assisted in that effort by appropriating 6 million dollars pursuant to the December 10, 1986 Agreement to allow water for the first time to be transported to the Ute Mountain Ute Indian Reservation. Further, the State of Colorado is now in the process of appropriating an additional 5 million dollars to implement the December 10, 1986 Agreement.

I. Introduction

On December 10, 1986 the State of Colorado, the Ute Mountain Ute Indian Tribe, the Southern Ute Indian Tribe and a large group of local water users in Southwest Colorado entered into an historic Ute Indian Water Rights Settlement Agreement. That Agreement requires legislative approval and appropriations by the Congress and appropriations by the Colorado Assembly.

The Agreement is historic in three ways. First, it resolves a long standing clash between federal and state water rights which if litigated would have unquestionably "closed down" several farming communities in Southwest Colorado and Northwestern New Mexico. Second, it creates a rare opportunity for an isolated, rural, and very beautiful portion of the West to generate an economy that will prevent a permanent loss of population and hope. Third, the Agreement represents a significant technical accomplishment of integrating complex State and Federal law, water resources, and administration. The Agreement is entitled to the full support of the United States Congress and the Colorado Legislature.

II. The Background

This Agreement ends a 100 year conflict. In 1868, the United States set aside large portions of Southwest, Colorado as permanent reservations for the Ute Indians.[1] Those reservations encompassed Winter's Doctrine federal reserved water rights to nearly all of the streams and rivers which flow out of the San Juan Mountains into the Colorado River system.

During the last ten years the United States, the State of Colorado, the local water users, and the two Indian Tribes began to prepare for what would certainly be time consuming and injurious court litigation to resolve once and for all the scope of the federal reserved rights vis a vis the competing state water rights relied losers would emerge from such litigation, the Attorney General of the State of Colorado proposed in April of 1985 that the parties make one last run at achieving a negotiated settlement. As a result of that invitation, an intensive two years of negotiations generated the final agreement of December 10, 1986 signed not only by the Tribes, the State of Colorado and local water users, but also by the United States Department of Justice, and United States Department of Interior.

III. Summary of the Agreement

First and foremost the Agreement quantifies the Tribes' reserved water rights from available streams and rivers passing through the Reservations and from the partially completed Dolores Project as well as the yet to be constructed Animas-La Plata Project. The Tribes are provided with significant amounts of water for irrigation, municipal and industrial purposes. Their water rights will be administrered pursuant to specific and detailed terms, and the administration of the Tribes reserved water right is incorporated into the general administration of state water rights in Southwest Colorado.

The Agreement of December 10, 1986 also incorporates a cost sharing arrangement satisfactory to the Secretary of Interior necessary to permit the long promised but yet to be constructed Animas-La Plata Project to become a reality. Both the Dolores and the Animas-La Plata Projects are required to create a sufficient reservoir of stored water so that the competing claims for Indian water and non-Indian water can both be satisfied. Congress understood years ago that these two projects would be required to support the water requirements existing in Southwest Colorado and Northwest New Mexico. That is why in 1968 Congress enacted the Colorado River Basin Project Act, 43 U.S.C. 61(a)(1) to assure that the Dolores and Animas-La Plata Projects would be constructed on a timetable roughly comparable to the construction of the much larger Central Arizona Project. In the Years since 1968 the Central Arizona Project has been generously supported by Congress, and much of that mammoth and important project is nearing completion. Hence, the Agreement helps to complete Congress' original plan to build adequate water storage facilities to assure a permanent Upper Basin economy utilizing all of Colorado and New Mexico's allocations of Colorado River Water.

IV. Tribal Development Funds

An important aspect of the Agreement is the establishment of tribal development funds for the Ute Mountain Ute and Southern Ute Indian Tribes. The development funds are intended to establish in the Tribes the financial capability to utilize their water resources to create a permanent Reservation economy. The amount of the development funds reflects a recognition of (i) long standing breach of trust claims against the United States arising from the unlawful appropriation of Ute Indian Water for federal purposes, (ii) the money saved by the State and its local subdivisions by foregoing the costs of litigation and (iii) the injury to the local economy which would be caused by the Tribes' assertion of their senior water rights in protracted court litigation.

The State of Colorado is contributing $11 million to the development funds and the United States is contributing $49.5 million. Six million dollars of the State of Colorado contribution has already been allocated for construction of the Cortez-Towaoc pipeline -- designed to bring for the first time potable water for domestic purposes to the Ute Mountain Ute Reservation. In addition, the State of Colorado in the Agreement committed $5 million to be put into the Tribes' two development funds for economic development purposes. The federal government's $49.5 million contribution will be made in three appropriations, the first one of $19.5 million, the second one of $15 million, and the third one of $15 million. As described below, the development funds will be used to take the wet water achieved by the settlement and begin to develop a viable and long term economy for the Reservations.

V. Projected used for the Ute Mountain Ute Tribe Development Fund

Introduction

The Tribe's request for a $40.5 million development fund is based upon the estimated costs to construct projects to develop the water resources on the reservation that are guaranteed from the settlement and to develop businesses associated with the water resources. Six million dollars of the fund amount is being provided by the State of Colorado as a municipal pipeline to deliver treated water to the Tribal town of Towaoc; the remaining amount, $34.5 million, is to be put in a trust fund. The total development fund amount was determined by estimating the costs required to develop the following projects which are described in detail below: (1) Dolores Project, (2) Animas-La Plata Project, (3) San Juan River water, and (4) various small water developments.

The total estimated cost of the potential projects far exceeds the amount of the development fund. However, some of the projects will not require funds until many years in the future so the interest accruals will allow the accummulation of sufficient funds to capitalize the projects. Monies for utilization of Dolores Project will probably be the initial withdrawals from the development funds.

The Tribe will also assess the feasibility of auxilary agricultural enterprises, that would add value to Tribal and non-Indian production from the Dolores and Animas-LaPlata Projects. These enterprises could improve the profitability of the Dolores Project and provide development fund investment opportunities.

The most immediate priority is the municipal and irrigation water that will be provided by the Dolores Project. Presently the Tribe has an inferior municipal water source and only 265 acres of irrigated agriculture. In order to economically and effectively utilize the water from the Dolores Project the Tribe has begun the process to plan for the project with available funds but additional funds are needed, as the delivery of water approaches, to prepare more detailed plans.

A. Pilot Irrigation Project and Enterprise Development

Currently the Tribe is developing an irrigation demonstration project on the reservation in anticipation of irrigation water from the Dolores Project. The Tribe has installed a 50 acre center pivot and 4 sideroll sprinklers serving 95 acres. These sprinkler systems will be used to experiment with crops, provide training, and make a profit. The Tribe also has about 120 acres of gravity irrigated lands. The total of 265 acres is all the water that is presently available for use on the reservation. The demonstration project will provide experience in irrigation so that when Dolores Project water is delivered in 1994 the Tribe will have the capability to operate a sprinkler irrigation system on a profitable basis.

In conjunction with the demonstration project, the Tribe has established a Farm and Ranch Enterprise to farm the existing irrigation lands and manage the Tribe's cattle. The first purpose of the Enterprise is make the existing resources profitable. The long term purpose of the Enterprise is to operate the Dolores Project irrigated lands. The Enterprise will be planning for the Dolores Project lands between now and when water is available. The enterprise will plan to incorporate production from the new land into the Tribe's existing Farm and Ranch Enterprise. If feasible, the

Enterprise may also pursue related agricultural business that build on the irrigation base; some of possibilities are described in Section F.

B. Dolores Project Developments

The Dolores Project will supply 1000 AF of municipal water through the Towaoc pipeline and 23,300 AF of agricultural water through the Towaoc Canal. Six million dollars will be spent to construct a municipal pipeline and improvements within the distribution sustem in Towaoc. A portion of the development fund will be allocated each year to pay for treatment of the Tribe's Dolores Project water by the City of Cortez and for maintenance costs on the delivery and distribution system.

Development of the 7500 acres of irrigated land will involve installation of sprinklers and power lines, purchase of farm equipment, land preparation, and construction of roads and farm buildings. The present cost estimate for those facilities is $10,200,000. The investment would begin in 1993 in anticipation of the first delivery of water in 1994. The time required for full development would be 2 to 5 years depending upon economic considerations. The O,M&R costs for the irrigation facilities would be paid from the development fund for up to ten years.

C. Animas-La Plata Project

The Tribe will be allocated 6000 AF of municipal and industrial water and 26,300 AF of agricultural water from the Animas-La Plata Project. The water will be available in Ridge Basin Reservoir during Phase I of the construction of the project and will be delivered to the reservation during Phase II of the project. Phase I will be constructed between 1987 and 2000. Phase II will be developed by the two Tribes, local water users, and the State of Colorado. The development fund is sized to provide the funds to develop the Tribal lands that could be served when Phase II of the project is constructed. The development fund would provide monies for installation of the pipe laterals to distribute water from the canal to the lands, installation of sprinklers and power lines, land preparation, purchase of farm equipment, and construction of roads and farm buildings. The current estimated cost of these facilities is $30,500,000 for the pipe laterals and $15,400,000 for the other facilities. The costs are based upon 12,000 acres of irrigated land.

As with the Dolores project, the development fund would also provide revenues for O,M&R cost during the first ten years of operation.

D. Other Water Resource Projects

The Tribe will also receive water rights to flows of the San Juan River, Mancos River, and Navajo Wash from the settlement. There are small projects that could be constructedto develop the water supply available from these sources. Some of these developments may be irrigation related but they could also include a better municipal water source for homes along the Mancos River, a recreation reservior in conjunction with Tribe's archeological park, and tourist facilities near the reservoir and park. The estimated cost of each of these small projects is from $100,000 to $1,500,000. The development fund would provide revenues to construct these small prjects when they are needed and feasible.

E. Integrated Agricultural Investments

The projects under this category are not related directly to development of water supplies but would incorporate satellite businesses with the basic use of water. These primarily involve activities to utilize the production from the agricultural lands, both Tribal and non-Indian, which might include feed lots and grain facilities.

The feed lot could be developed using the hay and grain production to raise and fatten cattle and sheep on the reservation, and add value to tribal production. If the economies exist, the feed lot could also be expanded to included non-Indian agricultural production. The feed lot could handle as many as 60,000 head of cattle and 20,000 head of sheep per year; the estimated cost of the facility would be about $3,000,000. A further extension of the feed lot would be a slaughtering facility which would cost about $1,000,000. Feed processing, storage and handling facilities could also be integrated with farm and livestock operations. Grain handling and storage facilities, a feed mill, and a pelleting mill would cost around $2,000,000.

VI. Summary

The Tribe intends to use the water allocations and the development funds provided by the settlement to enhance the reservation economy and increase tribal economic self-sufficiency.

STATEMENT OF JOHN MURPHY, PRESIDENT, ANIMAS-LA PLATA WATER CONSERVANCY DISTRICT

Senator Domenici. Thank you very much.

Did we want to John Murphy to testify?

John Murphy. I am right here.

Senator Domenici. John, do you want to give us brief testimony regarding the Animas-La Plata Water Conservation District?

Mr. Murphy. Thank you. Chairman Domenici and members of the committee, my name is John Murphy. I am the president of the Animas-La Plata Water Conservancy District. I am a former mayor of the city of Durango and a lifetime resident of Colorado.

As a matter of fact, I was born on the farm where this water will be put to use in the irrigation project. It is our pleasure to appear before this committee and ask for the $6.2 million for the Animas-La Plata project. There was a time not so long ago, in the era of the water project "hit list" time that it appeared not too certain we would ever see this project.

But as a result of the long and hard negotiations among the water users in the southwestern corner of Colorado, the two Ute Indian Tribes, and the state of Colorado and the federal government, we have reached an agreement that has made it possible for us to come here today and ask for appropriation for the project.

These agreements which have been referred to by Congressman Campbell and Chairman Baker and Chairman House produced the agreement in principal which involved all the nonfederal entities there and which quantified the Indian reserve water rights claim.

Then there was the cost-sharing agreement which was agreed to on June 3, 1986, the Colorado Indian water rights final settlement agreement.

Now, in that was a construction and completion schedule over 12 years, and in order to stay on that schedule, the Bureau of Reclamation has stated that it would be necessary to have $6.2 million for appropriations in fiscal year 1988. So that is why we are here, to ask that you seriously consider giving us that money so we can be certain to stay on that construction schedule.

I would like just to take this opportunity to pay tribute, once again, to our good neighbors there, the Southern Ute and the Ute Mountain Ute Indian Tribes, without whose cooperation and whose responsible, unselfish, and thoughtful consideration during all these negotiations it would certainly not have been possible to achieve this agreement. They were, they have always been, our neighbors, good neighbors, and we hope that we can go ahead and get the money to complete this project so that they can be repaid for their unselfishness and cooperation in the manner which they should be.

I wanted to thank you and the members of the committee for the opportunity to appear here, for your attention and consideration. Once again, I urge support of the $6.2 million funding for fiscal year 1988. Thank you.

[The statement follows:]

STATEMENT OF JOHN E. MURPHY, PRESIDENT, ANIMAS-LA PLATA WATER CONSERVANCY BOARD

I am John Murphy, President of the Board of Directors of the Animas-La Plata Water Conservancy District, a former Mayor of the City of Durango, and a lifelong resident of southwest Colorado. It is an honor and pleasure for me to appear before this committee to request funds in the amount of $6.2 million for the Animas-La Plata Project.

There was a time, a few years ago during the water project "hit list" era, when it appeared unlikely that the 1968 authorization to build the Animas-La Plata Project would ever become a reality. The fact that I am here before you is the result of long and hard negotiations among the water users in the southwestern corner of Colorado, the two Ute Indian tribes with reserved water rights claims, the State of Colorado, and the federal government. These negotiations produced three historic agreements:

1. An Agreement in Principle signed March 14, 1986, by all the non-federal entities involved which quantified the Indian Reserved Water Rights Claims;
2. A historic Cost-Sharing Agreement between the non-federal entities and the federal government, signed June 30, 1986; and
3. The Colorado Ute Indian Water Rights Final Settlement Agreement executed December 10, 1986.

These three agreements to settle the Colorado Ute Tribes Reserved Water Rights Claims will avoid litigation which could have taken years, caused enormous uncertainties about water rights, cost millions of dollars, and pitted Indians against their non-Indian neighbors. Such litigation would most certainly have adversely affected the development of both the Indian and non-Indian economies of southwestern Colorado and created bitterness and distrust between the Indians and their non-Indian neighbors.

An integral part of the Final Settlement Agreement was a commitment by the federal government to support funding for a 12-year Animas-La Plata construction completion schedule. The Bureau of Reclamation estimates that $6.2 million is required during fiscal year 1988 to achieve this rate of construction. The fiscal year 1988 Presidential request, however, is short by over $4 million. Therefore, on behalf of the Animas-La Plata Board, I turn to you with confidence that our long years of negotiation will not be upset by inadequate funding.

Let me assure you that the response to the Animas-La Plata Project by the agricultural interests in southwest Colorado has been overwhelming. We have held several open house meetings in the small community of Marvel, Colorado, the heart of the dry land country which would benefit from the Project. At the meetings, excellent presentations of the Bureau of Reclamation were received enthusiastically.

I understand that a farmer from a neighboring county has come crying that the Animas-La Plata Project is unnecessary. Not only is this untrue, but we resent an outsider representing to Congress what is in our best interest. If you need to know the feelings of the public in the Project area, just call the people who live and work there. They will gladly tell you that we in southwestern Colorado have long taken pride in our relationship with our Indian friends and neighbors and our neighbors in New Mexico. We are especially proud of what we have accomplished over the past two years to resolve our dispute over water. We overwhelmingly support construction of the Animas-La Plata Project to allow farming to continue as a way of life and a vital aspect our area's economy and to settle the reserved water rights claims of the two Colorado Ute Indian Tribes.

Thank you very much for your attention and consideration. I urge your support of the $6.2 million funding request for the Animas-La Plata Water Project.

INDIAN WATER RIGHTS LEGISLATION

Senator DOMENICI. Thank you very much.

Might I ask, now, the two chairmen, Chairman Baker and Chairman House, as I understand it, chairmen, before we can proceed up here we must pass some legislation to implement the Indian water rights settlement which was worked out in principle. As you have so indicated here, that is a very complicated document.

As I understand it, the attorneys are drafting it and seek the assistance of the Department of the Interior in putting the finishing touches to it so that it is acceptable to the Department as trustee and so we can get an agreement we can start to legislate on.

How close to completion is that agreement so that we will be able to begin legislating on it? Do either of you have any information for me, or does the Congressman?

Mr. DYER. I know it is being reviewed by Interior and Justice both now, but I don't know at what point they are. To my understanding, it is very close to approval now.

Senator DOMENICI. Let me say to you publicly that we had the Secretary of Interior up here with reference to Animas-La Plata, and the $1.955 million in the budget. We determined that actually, the Bureau had requested $4.3 million of OMB for this year and were cut back to the $1.955 million.

We will do our very best to raise the dollar number to the maximum amount. But I think it is absolutely imperative that we get the agreement on the water rights entered into, and that it be consistent with the understandings arrived at last year.

We did ask the Secretary of Interior if it was his policy that the Department assist Congress in the drafting of it. He indicated yes. He was quite surprised to hear that perhaps there was some dragging of the feet in the Department when the representatives, technical representatives came up.

So, I would very much appreciate it if the two chairmen would advise the committee if the Department of the Interior is, indeed, not helping with the drafting of the agreements because obviously, that is the cornerstone. I mean, if we don't have that, then obviously, we don't have anything, and it is a very valuable part of this settlement.

Sometimes the people up here forget that not only was this project authorized 20 years ago, just like the lower basin projects, but that they were all in one authorization. We are late in getting started, but clearly, if the two Indian groups desire to exercise the controversial water rights, we would be at it another 10 or 15 years in court, and who knows how it would all come out. Clearly, it would be a mess for everyone.

So again, I have told you before that while you are not in my state, the exercise of your water rights could surely have a devastating effect on a number of states, and I compliment you for trying to resolve it. I believe it is incumbent upon the federal government to help. I don't ask that they draft an agreement; that is your business.

But clearly, they have a responsibility to get on with helping us so we can get it done. So if there is any refusal on their part, implied or otherwise, and I am not claiming that yet, I am sure the committee would like to know it. Because we asked of it the other day when we were talking with the Secretary, and he said they are going to help in every way possible.

Yes, Mr. Chairman?

Mr. HOUSE. Senator Domenici, the Ute Mountain Reservation goes into the state of New Mexico. It covers the state of Colorado and the state of New Mexico.

The Department of the Interior has come up with draft legislation that we are looking at right now. I think Chairman Baker would look to that.

Senator DOMENICI. Yes?

Mr. BAKER. Yes. The agreement has been signed by everybody that was involved, including the states and the tribes and all of the other people I can say that were involved. Right now, last week, we worked on the legislation in Denver, and it was passed on to Interior to do their final touches on it.

As to cooperation, I think the cooperation could be better, and I think the timeliness of getting this legislation out could be a little faster. We have some deadlines to look at, and we want to feel safe that we are meeting those deadlines.

Like you say, this legislation means a lot to everyone in the southwestern part of Colorado.

Senator DOMENICI. But the tentative legislation is in their hands for them to make the final assessment of it, and that has been delivered to them in Denver; is that right, Mr. Chairman?

Mr. BAKER. Yes.

Senator DOMENICI. Perhaps we can inquire, and let me just state in the record, I would like staff to inquire into the status of the negotiations with reference to the final draft. I don't think we want anything to take precedence over the funding; we want everything done so that there can be no excuse. If that agreement is not up here where we have the legislation going through the Congress, somebody can say until that is done, we need to wait.

So, it is certainly not anyone's fault. Let's see if we can expedite it.

Let me say to Chairman House, I am fully aware of where your reservation is. I was referring to the principal water disputed areas and the application of the water rights. They are principally in the state of Colorado, but if you exercise them to the maximum, there would be a dramatic effect on water development not only in Colorado, but in the New Mexico area. That is why we have been very interested and that is why our people have all joined together and signed agreements on their side with reference to cost sharing.

ADDITIONAL PREPARED STATEMENTS

I know that you have submitted supporting statements for the record and those will be included at this point.

[The statements follow:]

STATEMENT OF FRED KROEGER, DURANGO, COLO.

I am Fred Kroeger of Durango, Colorado. I am here to request the full funding recommended by the Bureau of Reclamation for two southwest Colorado water projects: $6.2 million for the Animas-La Plata Project and $20 million for the Dolores Project.

I have been a member of the Board of Directors of the Southwestern Water Conservation District of Colorado for 37 years. I was also privileged to serve on the Colorado Water Conservation Board for 21 years. During those years I have seen the many benefits brought to Colorado by water resource development projects, including the Glen Canyon, Flaming Gorge, and Wayne Aspinall storage units and the Paonia, Smithfork, Florida, Silt and Bostwich Park participating projects. In all my years of service, however, I have never seen a project which would provide so many benefits to so many people, and solve so many problems, as does the Animas-La Plata Project.

The Colorado Ute Indian Tribes' reserved water rights claims present the most significant problem that will be solved by the Project. Thousands of hours of diligent effort by literally hundreds of people at all levels of government were required to reach the Colorado Ute Indian Water Rights Final Settlement Agreement, signed on December 10, 1986, by the Colorado Ute Tribes, the federal government, the state of Colorado, and local water users. The Agreement is an extraordinary example of what can be accomplished by compromise and cooperation.

The Final Settlement Agreement, which quantifies the Indian Tribes' Winters water rights claims, will enable the Tribes to develop their agriculture, municipal and industrial potential on each of the streams which crosses the reservations in an orderly fashion with the certainty of a well-defined supply of water. The quantification and resolution of the Tribes' Winters water rights claims will also bring certainty to the non-Indian water users in southwestern Colorado.

We believe that the negotiations process which led to the settlement of the Tribes' water rights could become a model for such water rights negotiations throughout the west.

The binding Cost-Sharing Agreement of June, 1986, which provides a upfront cost-sharing agreement for the construction of the Animas-La Plata Project is, likewise, a model for financing future water resource development projects in our nation. The Cost-Sharing Agreement marks the end of an era of water projects financed solely by the federal government, and the beginning of a new age of partnership between the federal government, the states, and the local water users for the financing of critically needed water development projects.

The State of Colorado, the Ute Indian Tribes, the water users of southwest Colorado, and the federal government are all in a "win-win" situation. The construction of the Animas-La Plata Project will enable both Indian and non-Indian water users in southwestern Colorado to utilize, for beneficial purposes, their fair share of the waters of the Colorado River and its tributaries. The Project will allow the federal government to honor its commitments to the Indian people made in treaties and agreements which were signed over a hundred and twenty years ago. All parties will avoid costly and divisive litigation over the nature and extent of the Tribes' reserved water rights claims. Finally, the state of Colorado will continue with the responsible tradition of cooperating with her Indian citizens for the mutual benefit of both the state and the Indian Tribes.

The $6.2 million request for the Animas-La Plata Project represents money to be spent for the purchase of lab and office equipment, preconstruction activities on Ridges Basin Dam, cultural resource mitigation, design, data collection and land acquisition. This budget increase over the President's FY '88 budget request is of great importance in securing the commitments of the federal government made, as a part of the Final Settlement Agreement, as recently as four months ago. Government officials promised to seek a funding level which would support a twelve-year construction schedule on the Animas-La Plata Project. To honor the government's agreement, the $6.2 million funding appropriation is necessary.

I would also wish to discuss the merits of the Dolores Project which is two-thirds completed. The President has stated his policy that water projects which are substantially completed will receive the funding required to enable them to be finished as quickly as possible. The Bureau of Reclamation has estimated that an expenditure $20 million is required to keep the Dolores Project on its current construction schedule. The President's budget request of only $11.9 million does not conform with his stated policy. On behalf of the Dolores Project I request that the Bureau's construction estimate of $20 million be the recommended appropriation.

Finally, let me state that in building water projects, delay is death. The San Miguel Project is a sound project which could have solved a lot of problems for water users in that area. The cost-benefit ratio, however, has eroded through the years so that the project now no longer qualifies for federal monies. In light of the bitter lesson of the San Miguel Project, we hope that neither the Animas-La Plata nor the Dolores Projects is forced once again to proceed at less than full speed.

Thank you for your assistance in the past and your consideration of our current requests. The people in southwest Colorado correctly perceive this committee will be of invaluable assistance in resolving our water problems.

STATEMENT OF BRICE LEE AND JOHN SCHMITT, BOARD OF DIRECTORS, ANIMAS-LA PLATA WATER CONSERVANCY DISTRICT

We are Brice Lee and John Schmitt of the Board of Directors of the Animas-La Plata Water Conservancy District. We are "dry-siders" who live and farm in the semi-arid region to be served by the Animas-La Plata Project. We presently support our families through dry land farming and we are as aware as anyone of the difference irrigation will make in our ability to produce a living from our lands.

We cannot count on sufficient rainfall to sustain the growth of our crops. Our access to irrigation water from the La Plata River is limited to the first few months of the growing season. About mid-June the La Plata River either dries up or is on call to meet the Interstate La Plata River Compact with New Mexico. The result is that unless by chance there is a rain storm we watch our flourishing crops wither and die for lack of water. We know that our soil is rich and will support valuable crops but without a reliable water supply we are limited to the farming methods practiced by the earliest settlers.

The approximately 400 small farms and ranches on the "dry side" grow crops such as alfalfa, pinto beans, and small grains. We grew up on such small farms. We have shared with family and neighbors the deepfelt disappointment when potentially bumper harvests have deteriorated and crumbled to nothing because of erratic rainfall and lack of irrigation water. Engineering studies indicate that the existing deplorable conditions can be overcome with a water storage project to meet our water needs from late summer to early fall. The Animas-La Plata Project, when fully operational, will enable us to capture and store water when it is plentiful and distribute and use it during times of shortage. The Project will stabilize the agricultural production of our farms and ranches and allow the people of our area to realize their long-held aspiration for a better life. We cannot, however, build this Project without federal assistance. I, therefore, repeat my pleas of other years that you help provide us the means of making the best use of our fertile soil.

Not only will the Animas-La Plata Project assist us dry-siders, the Project will help all in southwest Colorado. Although the Animas-La Plata Project was at the outset projected to have a benefit-cost ratio of 1.6:1, a recent study by Dr. Bernard Anderson, Professor of Economics, Fort Lewis College, reflects ratios in expanded direct benefits of 1.71:1, and in expanded total benefits of 2.82:1.

The Animas-La Plata Water Conservancy District is one of the signatories of the Final Settlement Agreement to satisfy the water rights claims of Southern Ute and the Ute Mountain Ute Indian Tribes in major part through the construction of the Animas-La Plata Project. We were proud to have been a part of this settlement to achieve the common good. Without this negotiated settlement of the reserved rights allocations for the Tribes we would certainly have been at loggerheads over water with our Indian neighbors. All parties recognize that by building the Animas-La Plata Project there will be sufficient water to allow growth and prosperity throughout southwest Colorado for Indians and non-Indians alike.

We are here today to request your continued help in achieving this goal. We ask your support for appropriation of $6.2 million so that this much needed project will not suffer further delay.

STATEMENT OF COLORADO STATE SENATOR ROBERT DENIER

I am Bob DeNier of the Colorado State Senate, representing the lands which are benefited by both the Dolores and Animas-La Plata Projects. This is my seventh year serving in the Colorado General Assembly, previously in the House of Representatives and now in the Senate. I have had the honor, as well, to serve on the Board of Directors of the Animas-La Plata Water Conservancy District, and feel I am quite knowledgeable about the Project. I am a long-time proponent of water development, and particularly of the Animas-La Plata Project.

The Animas-La Plata Project has been in the planning stages for over thirty years. It was authorized in 1968, at the same time the Central Arizona Project received authorization. We have yet to turn one shovelful of dirt to accomplish our goals, whereas the Central Arizona Project nears completion and is allocated a construction budget by the President of almost $200 million. The Animas-La Plata Project was targeted by the President for only $1.9 million. This inequity of treatment is all the more shocking when evaluating the worth of the Animas-La Plata Project.

First, the negotiations and ultimate agreement made among all the parties resolve Indian reserve water rights claims which would have crippled the operation of the prior appropriation system in southwest Colorado. Second, the Project guarantees a steady stream of water to the farmers on the aptly named "dry side" by pumping water from the Animas River, which has never been on call, to the La Plata River drainage, which seems to be perpetually in a state of shortage.

Third, the Project would supply needed municipal water to the City of Durango to accommodate existing needs and anticipated growth. Fourth, the Project, through Ridges Basin Reservoir, would create a recreational facility within a few miles of downtown Durango. The net effect of the Project is to increase receational use many times over. Fifth, the Project represents years of cooperative effort between New Mexico and the State of Colorado. All too often states meet to litigate water questions rather than negotiate; in this instance, however, we have a classic example of two states working in a spirit of cooperation and compromise to achieve the reasonable needs of each.

Sixth, the state and local water entities have agreed to cost-share the Project with the United States Government. In regard to financing of the Project, it is in the best interest of the United States to move forward quickly so that other major federal projects can use the cost-sharing as a model. These reasons underscore the wise investment that $6.2 million represents on the Animas-La Plata Project appropriation.

I am, of course, also supporting the Dolores Project at the level of funding which will assure project construction and completion in a timely fashion. As a fellow government servant, I know how difficult it is to fund only a few projects when so many seem worthy of taxpayers' support. Yet both the Animas-La Plata and Dolores Projects contain a factor of Indian interests which separate them from most other projects. By completion of the Dolores Project, the Town of Towaoc, the principal residential area of the Ute Mountain Ute Tribe, will have potable drinking water as well as water for agricultural purposes. The Animas-La Plata Project will resolve the Colorado Ute Indian Tribes' 1972 reserved water rights lawsuit, as well as enable the Southern Ute Indians to develop their vast coal reserves. Congressional support of these projects will not only provide quality water projects to southwest Colorado, but will assist the federal government to meet its trust obligations to our local tribes.

Again, I call for funding for the Animas-La Plata Project at the $6.2 million level and the Dolores Project at the $20 million level.

STATEMENT OF THOMAS K. COLBERT, PRESIDENT, MANCOS WATER CONSERVANCY DISTRICT

I am Thomas K. Colbert, President of the Board of Directors of the Mancos Water Conservancy District and a County Commissioner of Montezuma County, Colorado. I sincerely hope this Committee will honor the commitment of the federal government to fund the Animas-La Plata Project for a twelve-year construction schedule and honor the policy of President Reagan to complete the construction of all ongoing projects, such as the Dolores Project, as quickly as possible. Without completion of both of these projects, I represent an endangered species - a non-Indian farmer dependent on state adjudicated water rights and a federal water project on the Mancos River.

Even though not yet quantified, the Ute Mountain Ute Indian Tribe's Winters water rights claims on the Mancos River, which flows through the Ute Mountain Ute Reservation, would have a priority date of 1868, the year the Ute Mountain Ute Indian Reservation was established pursuant to treaty. About 11,000 acres of non-Indian land and approximately 200 non-Indian families in the Mancos River area are receiving irrigation water diverted from the Mancos River, based on Colorado water court decrees dating back to 1874. As early as the 1880's, periodic droughts so diminished the water level of the Mancos River that there was an insufficient flow to irrigate lands under cultivation. Because the non-Indian agricultural economy is dependent on the continued availability of water from the River, a storage facility, the Jackson Gulch Reservoir, was constructed by the Bureau of Reclamation at a cost of approximately $4 million. This reservoir, completed in 1949, has been relied on for almost 40 years by non-Indian farmers to sustain their agricultural way of life. By December, 1986, approximately $500,000 had been repaid to the federal government by the Mancos River Water Conservancy District for the project.

Even with the Jackson Gulch Reservoir, however, there is not enough Mancos River water available to meet the needs of both Indians and non-Indians. The reliance of non-Indian farmers on the Mancos River and project water conflicts with the Ute Mountain Ute Indian Tribe's reserved water rights claims. The Jackson Gulch Project, ironically, was built by the United States Government, the historic trustee of the Indians. If the Winters claims of the Tribe, the potential breach of trust claims of the Tribe and the damage claims of the non-Indian farmers on the Mancos River were to be litigated, everyone in southwest Colorado would lose. The bitterness engendered by years of future court battles would devastate the cooperative relationship between Indians and non-Indians in the Mancos area developed painstakingly through years of dedicated effort.

The Final Settlement Agreement signed on December 10, 1986, with the Animas-La Plata Project as its focal point, is the Environmental Protection Act for the Mancos families dependent on water from the Mancos River and the Jackson Gulch Reservoir Under that agreement, the Ute Mountain Ute Indian Tribe would be granted a reserved water right for the diversion of 21,000 acre-feet to irrigate 7,200 acres of tribal land. Although this water right would have an 1868 priority date, in the spirit of cooperation, it would be subordinated to all water rights with an adjudication date prior to 1985. The Ute Mountain Ute Indian Tribe agreed to this subordination in consideration for benefits including water from the Animas-La Plata Project, construction of a domestic water pipeline to the reservation and the creation of a tribal development fund. It is imperative to our endangered way of life that your committee approve funding to allow a twelve-year construction schedule for the Animas-La Plata Project and rapid completion of the Dolores Project.

The completion of construction of the two projects will benefit not only the farmers in the Mancos Valley and the Ute Mountain Ute Indian Tribe, but also the federal government and the people of this nation. The federal government will save million of dollars in litigation expense and in potential damage claims. The American people will have an example of the value of cooperation and compromise among neighbors of different backgrounds. A fair level of funding for these two projects would be a fitting step forward in this, the 200th birthday year of our Constitution.

Thank you.

Dolores Projects, Colorado

STATEMENT OF JOE REED, FARMER, YELLOW JACKET, COLO.

Senator Domenici. I thought that what I would do in the interest of expediting matters on the Dolores, as far as the witnesses that are here, could we choose between Mr. Reed or Mr. Humphreys for a brief statement? Then we understand that you have another project that you would like to have some of your witnesses come to the table on, and I will save time for them also.

Who would prefer to testify, Mr. Reed or Mr. Humphreys?

Mr. Reed. Mr. Chairman, I am Joe Reed.

Senator Domenici. Mr. Reed.

PROJECT OPPOSITION

Mr. Reed. I am a farmer in Yellow Jacket, Colo., and under the Dolores project, my farm will be the very first phase of the Dolores project. In shortness of time, I believe I will just touch on two points. I believe our main concern is we do have a small group of people that have been in Washington. We understand they have sent letters to Washington that are opposed to the Dolores project and also the Animas-La Plata.

It is our understanding that they possibly had something to do with the $9 million being available out of the Dolores project.

My statement would be to you, sir, that there are only a very small minority of the people that will receive the water out in the Dolores project, and they just don't represent it. I believe that it should be restored to the $20.3 million. The project clearly meets the criteria of being almost 75 percent done. Also, the personnel and all the staff, the Bureau of Reclamation is already there. If they had to be laid off in the appropriation done a year or two down the road, it looks like it would cause chaos on the project.

Thank you.

[The statements follow:]

STATEMENT OF JOE REED, YELLOW JACKET, COLO.

I am Joe Reed, County Road 16078 X, P.O. Box 313, Yellow Jacket, Colorado 81335. I am located in Montezuma County, Colorado, which is in the very southwest corner of Colorado and under the new Bureau of Reclamation irrigation project of the Dolores River Project.

I am in the Fairview district of the project, which is the first phase of the project to receive water slated for the summer of 1987.

I am 56 years old and live approximately 200 yards from my folks homestead shack where I was born and raised. They homesteaded about 1909. My wife, Joyce, and I have raised five children on the same farm my folks homesteaded.

We have farmed the land as dryland and cannot really say we have made a living, but have lived on what we could make for the past thirty years.

There is a small group of people, a very small minority of farmers who will receive water from the project, the spokesman who is R.R. Hollen, Jr., are claiming the project will break the farmers under it. The majority of the farmers feel we sure as hell will go broke without it. When you raise 200 pounds of beans at $14.00 per acre or 18 bushel of wheat at $1.80 per bushel under dryland you cannot survive with 80¢ per gallon fuel and $50,000 tractors and $100,000 combines. Far too many years I have heard my folk's comments on droughts and crop failures, also in my thirty years on the farm I have witnessed many years of short or no crop, while I could watch my neighbors to the south, with irrigation, prosper.

I feel the $20.3 million dollars appropriation for the Dolores Project should be reinstated for several reasons, mainly for the people who stood on their own two feet and signed the contracts and who are willing to accept the repayment of the contracts, according to the recently adopted delivery schedule, should have the contracted water at the earliest possible time.

I believe that full funding for the project should not be delayed, as the Bureau of Reclamation personnel are now on the job and could continue to finish the project which is now 66% completed.

In my opinion, it would be much more efficient, to finish the project on schedule rather than delay it and come back sometime later, which would require a lot of rehiring staff. Therefore, it is my feeling the project should be fully funded until it is finished. It would surely help the Bureau in managing their personnel, construction schedules, and ulimately the total cost.

I further believe the Animas-La Plata Project should be fully funded at earliest possible point. It, together with the Dolores Project, provide the basis with which to completely settle the Indian Reserved Water Rights claims in southwest Colorado.

STATEMENT OF JOHN S. HUMPHREYS, DOLORES COUNTY, COLO.

Introduction

My name is John S. Humphreys. I have been farming in the Dove Creek area of Dolores County, Colorado for 21 years. Our area receives about 12 inches of natural moisture per year. Many of those twenty-one years I have harvested crops whose yield has been drastically reduced because of drought. Much of my cost of producing that crop is the same whether I harvest 200 or 800 pounds of beans per acre. Therefore, I am here before you today in support of continued adequate funding for the Dolores Project because I want water for my land!

Summary of Request

(1) $20.3 million appropriation for the Dolores Project
(2) Funding for the Animas-La Plata Project
(3) Support for the Ute Indian Water Rights Settlement

Testimony

Appropriation for the Dolores Project

Since the closure of the Uranium mines, the west end of Dolores County has returned to its two traditional industries, agriculture and county government, (courthouse-schools-roads-shop-etc.).

If the area is ever to progress in either agriculture or industry of any kind, water is essential. With an adequate supply of water, agriculture can begin diversification away from the two main crops, which presently are winter wheat and dry edible beans, into feed grains, forage crops and possibly some truck farming. With a guaranteed supply of grain and forage, the small local livestock industry could begin to expand and to finish its livestock ready for market, instead of shipping them to feedlots in other areas.

Several times, in the past, light industries of various kinds have studied Dolores County in anticipation of locating there. The lack of water for both municipal and industrial use has always been the main drawback.

All of my life I have heard people talk about the coming of the Dolores Project. When the original surveys were done, the property that my parents owned was to get about 400 acres of project water. As time passed and the western end of the project was cut back several times for different reasons, our property was finally completely cut from the project.

Because of my father's and my belief in the project and in what water can do, two years ago we bought 160 acres that will receive project water. At that time, Bureau of Reclamation construction schedules called for completion of the canal system to Dove Creek by 1988-89. Now the time table is 1990-91. The delay will cost our family a substantial sum of money. Gambling as we did in the timing of water delivery shows how much we believe in the concept and the dream of the Dolores Project.

The Dolores Project is very much needed by the area and I believe every effort should be made to complete it on schedule without further delay. Delay not only costs me, but through the "laying off", the "winding down", then the "gearing back up" for completion, it will result in more total cost for the Project.

Funding for the Animas-La Plata Project and Support for the Ute Indian Water Rights Settlement

Others with much more background and expertise than I will give testimony explaining these two issues. However, I do know that Dolores Project water, (water that would have come to the western part of Dolores County, specifically to my parent's farm), is now going to the Ute Mountain Ute Indian Reservation. I do know that this water is in lieu of the Indian's claims to the Mancos River. I am in favor of the negotiated settlement, rather than a litigated one. I do know that the Animas-La Plata Project is a key to the settlement. Therefore, I whole-heartedly agree with the philosophy they express and totally support their testimony.

Conclusion

Mr. Chairman, I urge you and this subcommittee to appropriate $20.3 million dollars for FY 88 construction on that Project. That is the amount needed for the Bureau of Reclamation to proceed with their construction schedules in an orderly fashion.

I thank you, Mr. Chairman, for having given me this opportunity to testify.

ANIMAS-LA PLATA PROJECT

Senator DOMENICI. Thank you very much. Let me just conclude now on the Animas-La Plata project. There is no question that Colorado and New Mexico have given, over the years, their support to the lower basin projects. They have clearly done their job in terms of water conservation; in terms of furnishing water in areas that would not have had water, and preserving the Colorado below New Mexico and Colorado, and it is our turn.

This is just as much a part of that project as any, so we are going to proceed now that we have an agreement,. We authorized it last year; there is a commitment, and it is good for both our states. It also is good for the entire basin and we are entitled to it. So you can rest assured that this Senator is going to do what he can to get enough funding in to make sure that it is a real commitment.

I am very fearful that such a small amount of money might clearly symbolize that there is still some reluctance about the Animas-La Plata project somewhere in the administration. I can't say that with certainty. Nonetheless, we have made our deal. We have made our deal with the Indian people with reference to some of their rights which clearly could have caused, at the bare minimum, great confusion, and at the maximum could have denied both our states and parts of Arizona huge amounts of water rights that they have been using and have been counting on.

So we are going to see to it that we get on with this project. I thank you all for your testimony,

STAGECOACH LOAN

STATEMENT OF HON. BEN NIGHTHOUSE CAMPBELL, U.S. REPRESENTATIVE FROM COLORADO

Senator DOMENICI. Congressman, we want to proceed with your two other witnesses from the city of Pueblo next.

Mr. Hunter and Mr. Fletcher. Representative Campbell, do you want to proceed?

Mr. CAMPBELL. Yes, sir; I think I will leave the gentlemen at the table to testify. I know we are a little pressed for time. I will say, though, that our Congressman came up from Colorado about 3 weeks ago with a ranking minority member of the Appropriations Committee and went to Steamboat with me to look over the Stagecoach project. I think they very clearly understand the necessity of moving forward with that project.

Over 60 percent of the money has already been raised locally to pay for that project. They are very concerned about inadequate funding for this year. So I would just ask Mr. Fetcher to go ahead.

STATEMENT OF JOHN FETCHER, SECRETARY-MANAGER, UPPER YAMPA WATER CONSERVANCY DISTRICT

Mr. FETCHER. First of all, I know that you are running late, so I will be very brief.

Senator DOMENICI. Thank you very much.

Mr. FETCHER. My name is John Fletcher. I am a rancher in the Elk River Valley north of Steamboat Springs. I am also secretary of the Upper Yampa Water Conservancy District, who is the component and applicant for the Stagecoach project. I think the Governor and Congressman Campbell have already mentioned this project which will do great things for our valley in terms of water storage, power generation, and primarily water that we need. We know what it is to run out of water when the streams go dry that have no storage.

It is pretty hard to irrigate when you don't have any water. But I will mention that the project, which is a $16 million project, the state is coming up with approximately $8 million. Our district is coming up with $2.5 million, which represents, as Congressman Campbell just said, about 65 percent of the total funding.

Already our district has spent $1.75 million to get us this far. We are ready to go into construction this summer. All of our permits are in place, including our 404 permit; the environmental impact statement has been approved by the Bureau; and the thing that kind of surprised us that last fall, when the Small Reclamation Project Act was amended and passed, there was specific mention of this project in the conference report.

We just kind of thought we were home free at that point, but I guess we aren't. One other point is that the loan application, a copy of which I have here on the table, has been through the Bureau, but has not yet been sent over to Congress. We are not quite sure why. I just thought maybe I could bypass the Bureau and give you a copy. [Laughter.]

[The statement follows:]

STATEMENT OF JOHN R. FETCHER, SECRETARY-MANAGER, UPPER YAMPA WATER CONSERVANCY DISTRICT

My name is John Fetcher. My son and I and our wives own and operate a cattle ranch on the Elk River, 20 miles north of Steamboat Springs, Colorado.

I am also the Secretary-Manager of the Upper Yampa Water Conservancy District, applicant for a combination loan and grant under the Small Reclamation Projects Act for construction of the Stagecoach Reservoir on the Yampa River 17 miles south of Steamboat Springs.

We ranchers know what it is to run out of irrigation water in early July when water is crucial for our hay crop. In our part of the country we need over two tons of hay to get one cow through our tough winter. In the drought year of 1977, when streams without reservoir storage went dry, some ranchers couldn't put up a single bale of hay and had to liquidate their herds. As Wayne Aspinall so often said, "In the arid West, the only way to have water during the dry summer months is to store the spring run-off."

Stagecoach will do just that, providing 4,000 acre feet for hay production and irrigated pasture as well as supplying 800 kw of hydroelectric power and 11,000 af for the growing municipalities and industries in the Yampa basin. As an additional and important feature, the reservoir will provide a needed recreation amenity that will boost the area's economy which falls flat when the ski area closes. The economy of Northwest Colorado depends on agriculture, coal mining and tourism. This undertaking will create an asset of lasting value for our region, an investment in our future, making jobs and generating revenue.

Total project cost is 16.3 million of which the State of Colorado is putting up 8 million and the District, 2.6 million. This represents 65 % in non-federal funding. As of this date our small district has spent 1.75 million of its own cash to bring us to a point where we can be in construction this June with project completion scheduled in 1989. The State now needs to be assured that, for it to release necessary funds for our 1987 construction season, the Federal funds (in the amount of 5.7 million) will be available in 1988.

Contractors in this area are really hungry and I know bidding will be very competitive. All permits, including 404, are in place. The Final Environmental Impact Statement has answered the environmental concerns. We are ready to go, all we need is your commitment to appropriate 5.7 million to trigger the State funds so we can start this summer.

FOUNTAIN CREEK FLOOD CONTROL PROJECT, COLORADO

STATEMENT OF KENNETH HUNTER, VICE PRESIDENT, PUEBLO CITY COUNCIL

Senator DOMENICI. Next we have the city of Pueblo, the vice president of the council; is that correct, Mr. Hunter?

Mr. HUNTER. That is correct, Senator.

Senator DOMENICI. Nice to have you here.

Mr. HUNTER. Thank you. It is very nice to be here. I am Ken Hunter, the vice president of the City Council of the city of Pueblo, and I am here today in support of the administration's budget request of $2.5 million for the continuation of Fountain Creek construction project in Pueblo, Colo. As you may or may not know, Pueblo is located in the confluence of the Arkansas River and Fountain Creek. It is very vigorous at the beginning, and it also causes serious problems as to flooding.

The flooding on the Arkansas River was basically taken care of in the Arkansas project and the building of the Pueblo Dam. That led us to a little self-security that really wasn't there, because in 1965, we had one of those 50-year floods that caused approximately $8 million in damage in our city.

We recommend continuation of funding to prevent this kind of thing from happening, because it could inundate part of Pueblo on the side, which has low- to moderate-income housing. It could also have adverse effects on the downtown core area, because at the present time we are trying to put in a convention center.

Without this flood control there, it is hampering that drastically. It also has some effects on the highway system. In Pueblo, it caused damage to Interstate 25 which runs north and south, and Highway 50, which is east and west, isolating the east side of the town, and there are two hospitals which are on the west side.

With all these reasons, and others that you have in my report, I would seriously like you to act favorably on the administration's request for the $2.5 million to continue the funding of the Fountain Creek flood control project.

Mr. CAMPBELL. Mr. Chairman, that will be a little easier on you, because we are not asking for additional money. We are just asking for a continued level of funding for that project.

Senator DOMENICI. You did exactly right. You don't want to talk too long, because you don't want to talk anybody out of yours. [Laughter.]

And this one is in the budget. [Laughter.]

Mr. HUNTER. We are asking for a continuation of the funding, the $2.5 million that has been requested.

Senator DOMENICI. I have been through your city many, many times. When I went to law school, I used to drive from Pueblo to Albuquerque every couple of weeks. Because I had my fiance in Albuquerque and my law school in Colorado, so I drove through there. I was kind of interested, since I am of Italian origin.

I never thought there were so many Italians in Pueblo, but I saw all the names of the businesses up and down the streets, and I was wondering how little Italy had got to Pueblo. [Laughter.]

I did inquire and I found out.

Mr. HUNTER. We have seven city councilmen and we have a Valentino and a Corsini on the council.

Senator DOMENICI. If we don't get it done this year, and you still have to come back and appear before Domenici, maybe you ought to bring them down.

Thank you very much.

Mr. HUNTER. Thank you you very much.

Senator DOMENICI. Representative, does that complete what you desire to present the committee?

Mr. CAMPBELL. Yes, sir; it does. Thank you.

[The statement follows:]

STATEMENT OF KENNETH S. HUNTER, VICE PRESIDENT, PUEBLO CITY COUNCIL, PUEBLO, COLO.

Mr. Chairman and members of the Energy and Water Appropriations Subcommittee, my name is Ken Hunter, Vice President of the Pueblo City Council. I am appearing before you today in support of the Administration's budget request of $2.5 million to continue funding construction of the Fountain Creek Flood Control Project in Pueblo, Colorado.

The City of Pueblo is strategically located at the confluence of the Arkansas River and Fountain Creek. Its location has given the community tremendous geographical advantage in its early development, but it has also made the community historically susceptible to the devastating effects of flooding from both the Arkansas River and Fountain Creek.

The Fryingpan-Arkansas Project and the building of the Pueblo Dam in the early '60s protected the community from flooding from the Arkansas River. This resulted in a false sense of security; a confidence that was forever shaken in 1965 when the community was inundated by a 50-year flood event on the Fountain Creek. This was the eighth major recorded flood of the Fountain Creek and resulted in $8 million in damages.

Shortly after the flood, the City of Pueblo began working with the U. S. Corps of Engineers in the development of the Fountain Creek flood protection plan. This plan had been 20 years in the design stage with Congress funding the initial stage of construction in Fiscal Year 1987 at a level of $673,000. In Fiscal Year 1988, the Administration has requested $2.5 million for the continuation of the project's construction.

We understand the constraints you are under as a result of the Gramm-Rudmann legislation, but this project is critical to our community's well-being and continued development. Each spring our community remains susceptible to this flood hazard. Until this project is completed, the community remains vulnerable to inundation, with potential threat to life and property. It has been estimated that another flood of the magnitude of the '65 flood would translate into $16 million worth of damages and inundate 53 City blocks at depths ranging to eight feet.

A major flood will result in: (1) damage or destruction to the homes of low-to-moderate income families on Pueblo's Lower East Side; and (2) damage to the City's Downtown Core Area, which includes many of the City of Pueblo's governmental buildings; and (3) paralysis of the community due to inundation of the City's major transportation corridors including Interstate 25, U. S. Highway 50, and the Fourth and Eighth Street bridges. This flood will hinder the provision of emergency medical care to Pueblo's East Side, the area most affected by the flood, as both hospitals are located west of the Fountain Creek.

This project will protect $34,509,000 in property and contents on Pueblo's East Side and $45,500,000 in property and contents in the Downtown Core Area.

The lack of flood protection is also currently hindering economic development and construction in the downtown area due to the floodplain designation. This includes the proposed downtown hotel/convention center project.

For all these reasons, we urge the Energy and Appropriations Subcommittee to retain the $2.5 million budget request by the Administration for the continued construction of the Fountain Creek Flood Control Project.

ADDITIONAL PREPARED STATEMENTS FOR THE RECORD

Senator DOMENICI. Before going to the next group of witnesses, the subcommittee has received a statement from the Governor of Wyoming, Mike Sullivan; the Colorado River Basin Salinity Control Forum; and others from that area of the country.

Without objection, all of those statements will be made part of the record at this point.

[The statements follow:]

STATEMENT OF GOV. MIKE SULLIVAN OF WYOMING

Summary of Specific Action Requested:

> Appropriation of funds recommended for Bureau of Reclamation projects within the State of Wyoming, for the Colorado River Storage Project and participating projects, and for the Colorado River Salinity Improvement Program.

Mr. Chairman, the functions and activities of the Department of Interior's Bureau of Reclamation related to water development and its utilization within the State of Wyoming and in the western United States continue to be of vital interest and of critical concern to the people of my State. I am personally aware that the same interest and concern is shared by the citizens of the other western States. Development and conservation of our water resources is of prime importance to the people of the State of Wyoming and of this Nation if we are to meet our Country's escalating energy and water demands. A focal goal of further economic development of our State is the establishment of greater energy and industrial activities but with such comes associated population and hence, water demand, growth.

Water development has been, and continues to be, a high priority and fundamental issue in the arid West and within the State of Wyoming. A comprehensive water development program was initiated in Wyoming during the 1982 Legislative Session. At this time, our Water Development Commission has a total of 58 projects under some level of consideration or under construction in its New Development and Rehabilitation Programs.

During the past five years, our State testimony to this Subcommittee has stated our pleasure in seeing the Buffalo Bill Dam Modification Project moving forward to a timely completion. We are now seeing this long-sought modification becoming a reality and believe that the suggested appropriation for this project is sufficient to keep this project progressing in a fine manner.

Similarly, we are encouraged by the level of funding suggested for expenditure during Fiscal Year 1988 for the Jackson Lake Dam Modification Project, and feel that such will keep this extensive project on track to a timely completion.

The State of Wyoming regards the repair of Fontenelle Dam to be vitally important to the proper joint operation of the Colorado River Storage Project reservoir system. We are quite pleased by and fully support the appropriation suggested to complete the installation of a diaphragm wall along the entire crest of the dam so as to remedy the seepage and foundation settlement problems which have plagued this facility and led to near draining of the dam in May, 1986. Considerable concern about the dam's condition and great support for a permanent solution to the dam's troubles have been expressed by the citizens of the southwestern portion of my State, and the dispatch with which the Bureau of Reclamation is moving to put to right the Fontenelle Reservoir is greatly appreciated.

I wish to convey to this Subcommittee the State of Wyoming's full support for Fiscal Year 1988 appropriations for Bureau of Reclamation activities within the Upper Colorado River Basin for the Colorado River Storage Project and the participating projects. The ability of the States which are party to the Upper Colorado River Compact to make full use of their shares of the waters of the Colorado River Basin is unmistakably interrelated to the completion of the water resources development envisioned within the Colorado River Storage Project Act.

The State of Wyoming endorses the funding levels recommended by the President's proposed Fiscal Year 1988 budget for the Bureau of Reclamation's Construction Program in the Upper Colorado River Basin. In addition, we respectfully ask this Subcommittee to give due consideration to the testimony of our neighboring States, Colorado and New Mexico, whose testimony before you requests a greater funding level for the Animas-LaPlata Project in those two States, and the State of Colorado's testimony seeking more Fiscal Year 1988 construction funds for the Dolores Participating Project.

Investment protection necessitates the Bureau's Operation and Maintenace Program. Due to the paramount importance of irrigated agriculture to the economies of our State, it is crucial that project works be kept up and maintained so that their reliability is assured. We suggest adoption of the recommended appropriations for these purposes.

The State of Wyoming affirms its support for the reclamation program of the Bureau of Reclamation and for such levels of funding to keep its programs and investigations in step with the demands. The benefits which have accrued to the Nation since the adoption of the Reclamation Act of 1902 exceedingly outweigh the costs incurred by the Federal Government and the States.

This Subcommittee is facing a watershed decision with respect to the Bureau of Reclamation and its future programs during its present consideration of the Fiscal Year 1988 budget, since the President has recommended drastic reductions in Planning Program appropriations for the Bureau of Reclamation. We, in Wyoming, are certainly aware of the budgetary situation we as a Country face, but whether no new planning studies should be initiated during the upcoming Fiscal Year is certainly a question open to debate. We urge that much deliberation be given to this aspect of the Bureau's budget before a decision is made.

We wish to take this opportunity to express our strong support for an adequate level of funding for the Colorado River Salinity Improvement Program. In testimony before this Subcommittee, Jack A. Barnett, Executive Director of the Colorado River Basin Salinity Control Forum, has urged that a total of $31,070,000 be appropriated for this important program. His testimony has set forth at length the individual activities and programs which must be funded to maintain adequate levels of salinity control in the Colorado River Basin. Wyoming, as one of the Colorado River Basin States comprising the Salinity Control Forum, has actively participated in the development of the recommendations presented by Mr. Barnett on behalf of the Forum and wholeheartedly endorses the same.

The $31,070,000 appropriation recommended by the Forum has been identified by the Colorado River Basin States as the minimum amount essential for Fiscal Year 1988 to prevent costly delay of the salinity control program mandated by Public Law 93-320, the Colorado River Basin Salinity Control Act, as amended by Public Law 98-569. Since the recent amendment of the Salinity Control Act, the Colorado River Basin States and the involved agencies of the federal government, acting through and with the Colorado River Basin Salinity Control Forum, have worked very hard to further formulate and implement coordinated salinity control measures, guided by a criteria of accomplishing first the most cost-effective projects.

The President's budget recommendation of $20,783,000 for salinity control expenditures within the Bureau of Reclamation budget is some $10,293,000 less than the Salinity Control Forum's recommended appropriation, and simply will not keep this vital program on track. We share the Forum's view and testimony that this Subcommittee should support an appropriation of $31,070,000 from these activities.

Mr. Chairman, on behalf of the people of the State of Wyoming, thank you for the opportunity to have this testimony considered by the Subcommittee on Energy and Water Development of the Senate Committee on Appropriations.

STATEMENT OF COLORADO RIVER BASIN SALINITY CONTROL FORUM

For the Department of the Interior

Bureau of Reclamation

	Colorado River Basin Salinity Control Forum's Recommendation
Construction	$28,050,000
Advance Planning	300,000
Plan Formulation	2,720,000
TOTAL	$31,070,000

RECENT BACKGROUND
Detailed Fund Allocation

In 1984 the Congress acted to revise the Salinity Control Act and to establish a policy in which the Basin states would cost share 30 percent of newly authorized salinity control works. With increased cost sharing, the Basin states have carefully examined the need for the salinity control program. After significant efforts to coordinate the views of many federal agencies and the seven Basin states, the states supported the multi-agency findings in a publication that was prepared last year by the Departments of the Interior and

Agriculture entitled 1986 Joint Evaluation of Salinity Control Programs in the Colorado River Basin.

The Colorado River Basin Salinity Control Forum met in October of 1986 and reviewed that report. The Forum determined that to implement the needed and necessary program identified in that report, the Bureau of Reclamation would require a total appropriation of $37,500,000 in FY 88. But in the proposed budget for the Bureau of Reclamation, the President has requested only $20,783,000. The Basin states have re-examined in great detail all of the features needed to control the salinity pollution in the Colorado River and concluded that the President's budget is not adequate to ensure that further pollution and degradation of the water qualities of the Colorado River do not occur.

Considering the limited funds available in the federal budget this year, the Basin states carefully reanalyzed all of the features of the Bureau of Reclamation salinity control program and identified reductions of $6,430,000 in the program. But the Basin states have agreed that $31,070,000 is the absolute minimum amount essential to maintain adequate levels of salinity control. More specifically, the Basin states have determined that it is very important to continue to fund the Colorado River Water Quality Office. That office coordinates the salinity control functions of all of the federal agencies and provides vital communication between the federal agencies and the Basin states. We ask that $620,000 be appropriated for the continuation of this office.

Further, the Basin states urge that $350,000 be appropriated for plan formulation in the Lower Colorado River Region of the Bureau of Reclamation and $1,750,000 for plan formulation in the Upper Colorado River Region of the Bureau of Reclamation. The Basin states also believe it essential that $300,000 be appropriated for advance planning in the Uinta Basin of Utah.

With respect to construction, the Basin states urge the appropriation of $13,000,000 for continuation of canal and lateral lining in the Grand Valley of Colorado; the appropriation of $14,200,000 for the continuation of deep well injection drilling and the construction of associated facilities to dispose of salt brines in the Paradox Valley of Colorado; the appropriation of $600,000 to continue verification studies of salinity control strategies developed by the Bureau of Reclamation in the Las Vegas Wash area of Nevada; and the appropriation of $250,000 for construction planning in the Lower Gunnison area of Colorado so that winter water can be placed in pipelines. This latter appropriation would allow construction to begin on one of the most cost-effective salinity control features now available in the Bureau of Reclamation Colorado River Basin salinity control program.

Failure to appropriate the above-identified funds for FY 88 will result in a greatly increased probability that water quality standards will be violated in the Colorado

River in the years ahead. It will also mean that in the future when an adequate program is ultimately constructed and paid for, the costs will be significantly higher than they would be if the above funds were now made available.

JUSTIFICATION

The waters of the Colorado River system serve some 17 million people and irrigate approximately 1.6 million acres in the seven Colorado River Basin states. The river also provides domestic and irrigation water to Mexico. Salinity has long been recognized as one of the major problems in the river. Water users in the lower reaches of the river system have suffered significant adverse impacts due to the river's salinity. These impacts have been estimated to have reached over $100,000,000 a year. Without salinity control measures and with increased demands for Colorado River water in the Basin, the river's salinity is projected to increase, further impairing the usefulness of this water supply, and the economic damages suffered by the water users may double by the turn of the century.

The Basin states concern with the river's increasing salinity led them to create the Colorado River Basin Salinity Control Forum in 1973. The Forum, whose members are appointed by the governors of the respective states, developed a salinity control policy that called for maintaining salinity concentrations at or below those levels found in the lower river in 1972, while the Basin states continue to develop their compact apportioned waters. The Forum has a continuing responsibility to see that a salinity control plan is implemented to meet the policy objectives.

After discussions between the federal government, the Republic of Mexico and the seven Colorado River Basin States, the Congress enacted in 1974 the Forum-sponsored Colorado River Basin Salinity Control Act (P.L. 93-320). Title I of the Act established a program to reduce the concentration of salts in the Colorado River below Imperial Dam (the last diversion point in the United States) for waters being delivered to Mexico. The Act also established a program, Title II, which allowed the states and the federal government to work together to prevent salinity increases in the Colorado River above Imperial Dam, benefitting users in the United States as well as Mexico. The 1974 Act also created a Colorado River Basin Salinity Control Advisory Council, composed of gubernatorial representatives of the Basin states to advise the Secretaries of the Interior and Agriculture and the Administrator of the Environmental Protection Agency as to needed annual adjustments to the salinity control effort.

In 1984, Congress enacted much needed amendments to the 1974 Act that were advanced by the Forum. The amendments (Public Law 98-569) authorized additional activities for the Departments of the Interior and Agriculture that were needed in order to meet the objectives of the Act. Previously the Congress had required the Basin states to, over a period of time, reimburse the Bureau of Reclamation expenditures in the amount of 25 percent of the total construction costs. The 1984 amendments by Congress required that for newly authorized construction, the Basin states must pay 30 percent of the construction costs upon expenditure, or over a period of time with interest.

Since the enactment of the 1984 amendments, the Basin states and all of the involved agencies of the federal government have worked diligently to determine a program that would be the least expensive program necessary to control the salinity of the Colorado River. The main goal of the Basin states and the federal government has been to identify the most cost effective program that will control the salinity of the river. The results of these combined study efforts have lead to conclusions that the salinity of the river can now be controlled at a greatly reduced funding level from that which was initially identified. The findings of these studies have been published in the 1986 Joint Evaluation of Salinity Control Programs in the Colorado River Basin. This report provides the best information available, at this point in time, to justify our requested level of appropriation. Unfortunately, the President's recommended appropriation does not satisfy the funding needs identified in this report which was prepared jointly by all of the federal agencies involved in the salinity control effort.

The Advisory Council made specific recommendations in its March 1987 Annual Report relative to the FY 88 funding of the salinity control efforts. The Colorado River Basin Salinity Control Forum is supportive of the recommendations of the Advisory Council. The appropriation felt necessary by the Advisory Council and the Salinity Control Forum with respect to the Bureau of Reclamation's budget for salinity control features for construction, advance planning, and plan formulation has been identified at the beginning of this statement.

We, therefore, urge that the House Committee on Appropriations, Subcommittee on Energy and Water Development, recommend $31,070,000 to be appropriated. We feel it is important to note that any further cuts in these appropriations would delay implementation of the salinity control program, resulting in further salt pollution of the river and significant future damage to the users of the Colorado River in the United States and Mexico. Catch-up funding attempts in future fiscal years will result in a program that will ultimately cost much more.

STATEMENT OF GERALD R. ZIMMERMAN, EXECUTIVE DIRECTOR, UPPER COLORADO RIVER COMMISSION

Summary of Specific Action Requested

Appropriation of funds recommended by the representatives of the States of Colorado, New Mexico, Utah, and Wyoming for the Colorado River Storage Project and participating projects.

Mr. Chairman, the Upper Colorado River Commission is an interstate compact administrative agency created by the Upper Colorado River Basin Compact of 1948. The member States of the Upper Colorado River Commission are: Colorado, New Mexico, Utah, and Wyoming. Since its inception, the Commission has actively participated in the development, utilization, and conservation of the water resources of the Colorado River Basin.

The member States of the Upper Colorado River Commission have always given strong support to water resources development in the Upper Colorado River Basin and in particular to the Colorado River Storage Project and participating projects. We who are interested in water resources development in the Basin appreciate the opportunity to provide testimony before this subcommittee in support of the appropriation of funds to continue the construction and operation of the Colorado River Storage Project and participating projects in Fiscal Year 1988.

Representatives of each of the Commission's member States will submit testimony to this subcommittee in support of specific appropriation requests that reflect the official position of each State with respect to the development of the water resource projects and programs in the Upper Colorado River Basin. Such specific requests will not be repeated here; however, they are fully supported by the Commission. You will note that the States' requested funding for the Fiscal Year 1988 ongoing program for the Colorado River Storage Project and participating projects is above that proposed in the President's Budget for the Bureau of Reclamation. Through these requested appropriations, water resource projects and programs within the Upper Colorado River Basin can be funded at a level that will benefit the local, regional, and national economies.

In addition to the above-stated support for funding the Colorado River Storage Project and participating projects for Fiscal Year 1988, the Upper Colorado River Commission supports the development and implementation of the Colorado River Salinity Control Program described in Public Law 93-320, as amended. This salinity program, which authorizes both title I and title II projects, is designed to maintain salinity levels in the Colorado River system within established water quality standards, is endorsed by the seven Colorado River Basin States and is essential to the overall development and management of the Colorado River Basin. Specifically, the Commission requests an appropriation of $31.07 million for the Bureau of Reclamation's title II Colorado River Basin salinity control program. A comparison of the amounts contained in the President's Budget and the funding level supported by the Upper Colorado River Commission for this program is as follows:

Activity	President's FY 1988 Budget	Commission's Request
	(Thousand Dollars)	
Plan Formulation		
(a) Colorado River Water Quality Office and Harry Allen Power Plant	$ 0	$620
(b) Lower Colorado Region	100	350
(c) Upper Colorado Region	775	1,750
Subtotal	$885	$2,720
Advance Planning		
(a) Uinta Basin Unit	$ 0	$ 300
Subtotal	$ 0	$ 300
Title II Construction		
(a) Grand Valley	$ 8,525	$13,000
(b) Paradox	11,383	14,200
(c) Las Vegas Wash	0	600
(d) Lower Gunnison Winter Water	0	250
Subtotal	$19,908	$28,050
TOTAL Program Funding	$20,793	$31,070

A more detailed statement regarding the specific funding for the salinity program will be presented in the testimony by the Executive Director of the Colorado River Basin Salinity Control Forum as well as by representatives of the Colorado River Basin States.

Mr. Chairman, on behalf of the Upper Colorado River Commission, thank you for providing the Commission an opportunity to present this statement for the subcommittee's consideration.

Specifically, the Upper Colorado River Commission requests an appropriation of $169.424 million for the Bureau of Reclamation's regular construction program. Of that amount, $6.15 million is for the Animas-La Plata Project in Colorado and New Mexico, $134.474 million is for the Bonneville Unit of the Central Utah Project in Utah, $8.5 million is for the Dallas Creek Project in Colorado, and $20.3 million is for the Dolores Project in Colorado. A comparison of the funding levels contained in the President's Fiscal Year 1988 Budget and the amount being requested by the Commission is shown in the following table:

Project	President's Budget	Commission's Request
	(Thousand Dollars)	
Animas-La Plata Project	$ 1,955	$ 6,150
Bonneville Unit (CUP)	134,474	134,474
Dallas Creek Project	8,500	8,500
Dolores Project	11,047	20,300
	$155,976	$169,424

Funding levels contained in the President's Fiscal Year 1988 Budget for other activities associated with the Colorado River Storage Project and participating projects are fully supported by the Commission and include:

Activity	President's FY 1988 Budget (Thousand Dollars)
CRSP, Drainage and Minor Construction:	
Central Utah Project:	
Jensen Unit	$100
Modification/Addition to Completed Facilities	396
Total	$496
CRSP, Preconstruction Activity:	
Central Utah Project:	
Uintah Unit	$100
Total	$100
CRSP, Section 8:	
Central Utah Project:	
Bonneville Unit	$ 780
Dolores Project	211
Dallas Creek Project	2,845
Total	$3,836

The above level of appropriations is needed to ensure that the full benefits received from these projects will be attained in a timely manner.

STATEMENT OF JACK L. STONEHOCKER, DIRECTOR, COLORADO RIVER COMMISSION OF NEVADA

Mr. Chairman, members of the subcommittee, Public Law 93-320 as modified by Public Law 98-569, sets forth a program to control salinity in the Colorado River. This program, commonly known as the Colorado River Basin Salinity Control Program, requires non-federal cost sharing of 30% for newly authorized salinity control projects. Nevada strongly endorses this program. We are a state short on water resources, and Southern Nevada is dependent on the Colorado River as a major water supply. Increasing levels of salinity threaten the water quality of this precious resource, therefore, an effective salinity control program is crucial.

The President's proposed budget for the United States Bureau of Reclamation's salinity control program, under the Department of Interior, is $20,783,000. I am very concerned that this amount is totally inadequate to maintain this important water quality effort. The Colorado River Basin Salinity Control Forum (Forum), on which I serve as a Nevada representative, has determined that the Bureau of Reclamation will require a total appropriation of $37,500,000 to continue the salinity control program on a preferred schedule. However, recognizing the fiscal restraints that the Federal Government is now experiencing, the Forum has carefully evaluated the funding requirements for the program and has concluded that a minimum funding level of $31,070,000 is required to ensure that basic and essential components of the program move ahead.

Given the importance of the salinity control program in preventing the degradation of our Colorado River water supply, we are respectfully asking that the subcommittee support and recommend an appropriation in the amount of $31,070,000 for the United States Department of Interior, Bureau of Reclamation, to be used for the continuing effort to check further increases in the salinity of the Colorado River.

STATEMENT OF BRUCE L. WOODBURY, CHAIRMAN, CLARK COUNTY (NEV.) REGIONAL FLOOD CONTROL DISTRICT

Mr. Chairman:

My name is Bruce Woodbury and I am the Chairman of the Clark County Regional Flood Control District.

Over the past several years we in Southern Nevada have sustained millions of dollars in flood damage to public and private property. Flooding has interfered with public transportation, emergency services such as ambulance and fire protection, and has even taken lives. National media coverage of our flood events tremendously damages our ability to attract tourism, conventions, and new businesses.

In 1984 alone, Clark County suffered over 9 million dollars in damages to public facilities and several times that in private losses. Seven people died in the 1984 floods.

The County and Cities have worked diligently with limited resources to try and solve flooding problems independently. In 1985, the Nevada State Legislature created the Clark County Regional Flood Control District to address the problem comprehensively. We have developed a Regional Master Plan to provide flood protection to all the residents of Clark County through the implementation of comprehensive construction and regulatory programs.

In September of 1986 the voters approved a 1/4 of one percent sales tax increase to fund the construction of Master Plan Flood Control Facilities and to implement a regulatory program to reduce future flood damages.

The Flood Control Master Plan identifies 835 million dollars worth of construction projects. Anticipated sales tax revenues to the District are estimated to be about 12 million dollars annually. With construction needs so much greater than our funding ability, the need for federal participation is critical to the timely implementation of the Master Plan. Without federal assistance many residents and businesses will go unprotected for decades.

The Corps of Engineers Continuing Authorities Program is critical to the timely development of flood control facilities in Clark County. Presently the District is cost sharing a feasibility study with the Corps on the Las Vegas Valley. This year the federal share of the study is $253,000. The District is matching this amount with a cash contribution and credit for in-kind services.

The Feasibility Study presently being conducted includes only the Las Vegas Valley. The District encompasses all of Clark County which has experienced a significant amount of damage outside the Las Vegas Valley. Because of the severe damage experienced in the outlying communities, we are requesting that the Corps of Engineers conduct reconnaissance studies in Boulder City and Mesquite, Nevada under Section 205 of "Small Projects" assistance.

Below is suggested language for including the reconnaissance studies in Boulder City and Mesquite:

APPROPRIATIONS LANGUAGE FOR BOULDER CITY

The Senate directs the Chief of Engineers to use funds of $60,000 provided under Section 205 of the Flood Control Act of 1948, as amended to undertake a Reconnaissance Study of Hemenway Valley in Boulder City, Nevada.

APPROPRIATIONS LANGUAGE FOR MESQUITE

The Senate directs the Chief of Engineers to use funds of $60,000 provided under Section 205 of the Flood Control Act of 1948, as amended to undertake a Reconnaissance Study of the Town Wash in Mesquite, Nevada.

We strongly urge your continuing support for funding of the Las Vegas Valley Feasibility Study. Clark County is one of the fastest growing areas in the County. With the development of the Master Plan and a local funding source for flood control we have done everything we can for ourselves. We are anxious to continue working with Corps of Engineers to complete the Feasibility Study and move into the construction phase.

Flood control is the highest local government priority in Clark County. We would be available to meet with you in Washington at any time to discuss our needs with Corps of Engineers or your Committee members. In the meantime please feel free to contact myself or Virginia Bax-Valentine, Chief Engineer/General Manager, of the District offices.

MISSOURI AND ARKANSAS RIVERS BASIN PROJECTS

STATEMENT OF FRANK PALERMO, COUNCILMAN, KANSAS CITY, MO.

ACCOMPANIED BY JAMES C. HART, TREASURER, MO-ARK ASSOCIATION

Senator DOMENICI. I understand that next we will hear from the Mo-Ark Association that we passed over earlier. We have Mr. Hart and Mr. Palermo, city councilmen.

Mr. PALERMO. Another Italian, Senator.

Senator DOMENICI. Nice to see you, Mr. Palermo. We are everywhere, aren't we.

We are going to have to expedite your testimony, so we are going to take any testimony and put it in the record. We are going to hear from Mr. Hart, the treasurer, and Frank Palermo, city councilman from Kansas City. Would you please proceed?

Mr. HART. Thank you, Mr. Chairman. You made a remark about we talked outselves out of what is going to be in it, so we should get everything.

Senator DOMENICI. The shorter, the more you get. Is that the rule?

Mr. HART. That is what I have been told. But it is an honor to appear here before you this morning. I have a group that has been before this committee several times in the past. One of the projects is now complete, through the effort of the Appropriations Committee and the continuous pushing of this session.

INTRODUCTION OF ASSOCIATES

I have with me this morning a retired Colonel Gunner, C.E. Gunter, retired; he is now a city engineer, myself, and the treasurer of the Mo-Ark Association. We have Max E. Norman, vice president, Chamber of Commerce, Kansas City; David Watkins, city manager at Lenexa, Kans.; R.L. Chandler, manager, Johnson County Water District No. 1; and Mrs. R.L. Chandler, Shawnee Mission. She didn't come with us, and our presentator, who is going to be Mr. Frank Palermo, councilman from Kansas City, Mo.

Senator, I will again accommodate your request for brevity and to limit our remarks. We have provided the staff with a statement for the record. I am Frank Palermo, city councilman from Kansas City, Mo. I serve as chairman of the operations and audit committee. I am now speaking on behalf of Kansas City, Mo., but also for the entire metropolitan Kansas City area and as well, the Chamber of Commerce of Greater Kansas City on both sides, the Kansas and Missouri sides.

Basically, we are supporting the recommendations of the Corps of Engineers. We have four projects that are very, very important to us. Indeed, they are critical. No. 1, the Blue River project; No. 2, the Upper Blue River study; No. 3, the design, engineering for the completion of plans for a 1988 startup construction of a part of the Brush Creek project.

TURKEY CREEK BASIN, MO., STUDY

This is critical, because the world-famous Country Club Plaza was, in fact, devastated just recently as a result of the floods in that area. The fourth and final request is studies on the Turkey Creek basin for economically feasible measures.

What apparently is happening in our area as a result of Turkey Creek and Brush Creek is that the 100-year floods seem to be happening more frequently. In fact, about every 10 years. Our request is that you continue funding of these critical projects. Greater Kansas City supports several projects of Missouri for which the Mo-Ark delegation is testifing today. The city of Kansas City, Mo., as well as Over Park, Kans., and others in the Kansas City area, are already working on providing a local share for all of these projects. To improve our ability to match future federal funding, we are currently working together to form a metropolitan strong water district within our mid-America Regional Council, which is the metropolitan planning agency for both Missouri and Kansas.

Our goal is to raise funds for intergovernmental stormwater and flood control improvements and provide an institutional framework for the bistate cooperation. All of the projects that we have proposed for further funding have been chronic problems for a number of years and are worthy of your continued support. We are pleased with the progress so far to date.

BLUE RIVER CHANNEL, MISSOURI

The Blue River channel project has moved forward. This basically will give you an update on what is happening. Our contract at the mouth of the Missouri River is complete and its second contract is nearing completion. We are extremely pleased with the project construction which is to compliment again the Corps of Engineers design is awaiting approval and we expect the restart of construction soon.

In the meantime, we are continuing to relocate railroad tracks and other utilities as a result of this. This year's federal appropriation will significantly advance this continuing project.

UPPER BLUE RIVER, MO., STUDY

A study of the Upper Blue River is moving forward and a feasibility report with alternate solutions has been presented for our review. A joint study team has been formed and is aggressively pursuing solutions for all affected governments in the metropolitan Missouri Kansas City area and Kansas City.

We expect to enter into a cost-sharing agreement for further study this year. The study of the Turkey Creek basin is considering interim solutions for a protection system against the continued flooding of the merchants along Southwest Boulevard. Turkey Creek lies in two states and three counties as it affects the commercial properties in not only Kansas City, Mo., but Kansas City, Kans., and the Kansas area as well, and not only commercial ventures, but residents, also.

Both cities have passed resolutions of support for the restudy. We have agreed to jointly sponsor a project with the study results being feasible. We welcome results we earlier cited. The Corps of Engineers is best equipped to reform the study of the conclusion.

We worked together closely. In fact, the solutions, the omnibus water resource bill contained in the authorization are the most needed challenges, improvement projects on Brush Creek, where high water resulted in death and destruction during a record flood of September 1977. This project will be a showcase of how local, state, and federal governments can cooperate for a beneficial project on a more equitable cost basis.

Thank you for supporting that bill, incidentally. In the case of Brush Creek, the city of Kansas City, Mo, is to finance $24 million of the $36 million project which will afford protection from our state line to other parts of the city. The city has already spent $1.8 billion on a new warm-up rolled bridge and has allocated $300,000 for shared design costs on the project.

We are coordinating the design for a most cost-effective project. As you know, the federal portion of the overall project is only $12.1 million because only $16 million of the project qualified under an AB formula. The city will pick up its share, the city of Kansas City, Mo, will pick up its share of the local costs of the project, which is approximately $4 million.

With that, I will concludle and say thank you very much.

Senator DOMENICI. Any other statements that you might have will be made a part of the record.

[The statements follow:]

STATEMENT OF KANSAS CITY, MO.

MR. CHAIRMAN AND MEMBERS OF THE SUB COMMITTEE

I am Frank Palermo, City Councilman in Kansas City, Missouri and Chairman of its Audit and Operations Committee. Today I am not only speaking on behalf of my City; but, I am also speaking as the representative of the Chamber of Commerce of Greater Kansas City.

We are most pleased that Congress appropriated funds for:

1. The Blue River project - mouth to 63rd Street
2. The Upper Blue River Study
3. Design engineering for the completion of plans for a 1988 start on construction of a part of the Brush Creek project.
4. Studies on the Turkey Creek basin for economically feasible measures.

Our request is that you continue funding these critical projects. Greater Kansas City supports the several projects in Missouri and Kansas for which the MO-ARK Delegation is testifying today.

The City of Kansas City, Missouri as well as Overland Park, Kansas and others in the greater Kansas City area are already working on providing the local share for all of these projects. To improve our ability to match future federal funding, we are currently working together to form a metropolitan stormwater district within our Mid-America Regional Council. Our goal is to raise funds for intergovernmental stormwater and flood control improvements and provide an institutional framework for bistate cooperation.

All of the projects that we have proposed for further funding have been chronic problems for a number of years and are worthy of your continued support. We are pleased with the progress.

The Blue River Channel project has moved forward. One contract at the mouth of the river is complete, and a second contract is nearing completion. We are extremely pleased with the project construction and wish to compliment the Corps of Engineers. The design of the next phase is awaiting approval and we expect a restart of construction soon. In the meantime, we are continuing to relocate railroad tracks and utilities. This year's federal appropriation will significantly advance this continuing project.

The study of the Upper Blue River is moving forward and a feasibility report with alternative solutions has been presented for our review. A joint study team has been formed and is aggressively pursuing solutions for all affected governments. We expect to enter into a cost sharing agreement for further study this year.

The restudy of the Turkey Creek basin is considering interim solutions for a protection system against the continued flooding of the merchants along Southwest Boulevard. Turkey Creek lies in two states, three counties, and affects the commercial properties in Kansas City, Kansas, and Kansas City, Missouri. Both cities have passed resolutions of support for the restudy. We have agreed to jointly sponsor a corrective project which study deems to be economically feasible. We welcome the early results of that restudy. The Corps of Engineers is best equipped to perform the restudy for an early conclusion. We must work together closely to effect the solutions thereafter.

The Omnibus Water Resource Bill contained the authorization of the most needed channel improvement project on Brush Creek where highwater resulted in death and destruction during the record flood of September, 1977. This project will be a showcase on how local, state, and federal governments can cooperate for a beneficial project on a more equitable cost basis. Thank you for supporting this bill.

In the case of Brush Creek, the City is to finance $24 Million out of a $36 Million project, which will afford protection from State Line to Prospect. The City has already spent $1.8 Million on a new Wornall Road bridge and has allocated $300,000 for shared design costs on the project. We are coordinating design for a most cost effective project. As you know, the federal portion of the overall project is only $12.0 Million because only $16.0 Million of the project qualified under the NED formula. The City will pick up its share of the local cost of the project ($4.0 Million), as well as finance a $10.0 Million project on each end of the federal project. As a result of this overall project, we expect a benefit of $60.0 Million in savings from flood damages in the future.

Mr. Chairman. In closing, let me repeat that those of us in Greater Kansas City support the several projects in Missouri and Kansas for which our delegation is appearing today. We further appreciate the opportunity to express our opinions to you regarding the Authorization and Appropriation Bills. We urge your continued realistic support of these projects and thank you very much for your consideration.

STATEMENT OF DAVID WATKINS, VICE PRESIDENT, MO-ARK ASSOCIATION

On behalf of the MO-ARK Association I would like to submit for your consideration the organization's endorsements of the following projects which are included in the fiscal year 1988 budget as submitted by the President.

The projects this organization wholeheartedly endorses include:

1. The Turkey Creek Basin Study in Kansas City, Kansas.
2. Brush Creek Flood Control Improvements in Kansas City, Missouri.
3. Flood control projects located in the Blue River Basin in Kansas and Missouri.
4. Improvements along the Little Blue River in Kansas City, Missouri.
5. Improvements along the Grand River in Missouri and Iowa.
6. Continued funding of improvements at Truman Reservoir in Missouri.
7. Proposed lakes along the Little Blue River in Jackson County Missouri.

These improvements are greatly needed to enhance the overall quality of life and to reduce flooding damage experienced in the past in these different locations. We understand the tough fiscal choices facing the Congress and note that several of these projects include local funding to complement the federal funds for these projects.

We appreciate your attention and interest in the organization's posture on these projects.

SUBCOMMITTEE RECESS

Senator DOMENICI. Let me just say that I am pleased that the Water Resources Development Act of 1986 is forcing some local participation and intergovernmental cooperation to come up with cost sharing. Clearly, we will have to have oversight over the years to see that indeed it is working. But for now, I note that it has, in the case of your area, forced at least one group to get together on an intergovernmental basis to see how they come up with cost sharing.

I think that is a good approach, and we thank you for your testimony, and good luck on the projects.

We stand in recess until 2 o'clock.

Mr. PALERMO. Thank you.

[Whereupon, at 11:45 a.m., the subcommittee was recessed to reconvene at 2 p.m. the same day.]

(AFTERNOON SESSION, 2:05 P.M. MONDAY, MARCH 30, 1987)

NONDEPARTMENTAL WITNESSES

Senator JOHNSTON. The hearing will come to order. We had have many distinguished groups appear before this committee, but this may be the most distinguished group we have had all year, namely because we have our distinguished voters and friends from Louisiana. [Laughter.]

Those of you who are neighbors of Louisiana from Arkansas, Texas, and Mississippi, you are the next best things to Louisianans. We really do have a good group and some interesting projects to talk about today.

We have, of course, a large number of witnesses to be heard, and in accordance with our previous notification to each of our witnesses, it will take some self-restraint on the part of everyone to hold oral testimony to a minimum in order that all of you who have requested an opportunity to testify may, in fact, be able to testify.

I ask that the detailed prepared statements that each of you have worked out very carefully be submitted for the record where they will be, in fact, carefully reviewed, both by the Senators and by the staff. Then if each witness will summarize or highlight the important points in his oral testimony, it will be most helpful.

Again, welcome to each of you, and before we begin our testimony, I want to call on the distinguished chairman of the full committee, who was chairman of this committee for many years and with whom I have worked very closely on projects of mutual interest, Senator John Stennis of Mississippi.

STATEMENT OF HON. JOHN C. STENNIS, U.S. SENATOR FROM MISSISSIPPI

Chairman STENNIS. Senator, I want to thank you, of course, for being here and holding these hearings. You always do a good job, as do the others on this committee. We never lacked for manpower and run into talent, too. So we are all glad to be here and glad to get started. I look back on my service on this subcommittee and the people I have learned to know through it. It is one of the best experiences I have had. I am glad to see all of you here and expressing this amount of interest and support for these important projects. Keep it up. Thank you.

Senator JOHNSTON. Thank you, Senator Stennis.

Now I want to call on my friend and colleague from Arkansas. Many of us were urging him to run for President. I think he got cold feet, or least a cold knee in the process. [Laughter.]

Senator Bumpers?

STATEMENT OF HON. DALE BUMPERS, U.S. SENATOR FROM ARKANSAS

Senator BUMPERS. Mr. Chairman, thank you very much, and not to impinge on your generosity and time this afternoon, I submit my full statement for the record. I always like to submit that statement in full so that all the constituents of my state will know that I am fully aware of each project that they are interested in.

We have the Arkansas River Basin Interstate Committee here today; Arkansas Red River Commission, which the Senator from Louisiana and I both share considerable interest in; the Lower Mississippi Valley Flood Control Association; tomorrow, the Speaker of our State House of Representatives in Arkansas, Earnest Cunningham, will be here to testify, and then we have written testimony prepared that will be submitted for the record, Mr. Chairman, from the Ouachita River Valley Association.

In addition to my comments on all of those things, I do want to state that all of the people who are involved in these various commissions who make these pilgrimages up here every year and who spend a lot of their personal time throughout the year in preparation for their appearance here do so in a largely selfless and purely motivated way because they are concerned about their areas. We have some harbors we are trying to get developed in Arkansas and have for years, because it is so important to the people of the areas economically. On those 107 harbors, the Secretary of the Army for Civil Works, Mr. Dawson, has taken a position in his rules and regulations that if it is just an economic benefit to the community the Corps does not want to participate; that if it improves the navigation of or transportation to various rivers, then they are for it.

Quite frankly, I have the utmost respect for Secretary Dawson, but that position never has made much sense to me. Of course, it seems to me that almost anything you do on the river has to necessarily both improve transportation and the use of the river as well as help the communities and the economies of the areas that are affected.

ARKANSAS RIVER NAVIGATION SYSTEM

That is one of the primary things we want to do. Let me just close by bringing up a matter that may not be mentioned by any of the witnesses here today. The Corps is again trying to deauthorize the Arkansas River navigation system and I have steadfastly opposed this in the past, as has Senator Pryor, who will be here momentarily.

I would like to say for the record here today that I will do everything I can to make sure that the Arkansas River navigation system is not deauthorized. The Arkansas River is only in the early stages of the development of the uses we can make of it. As time goes on and water resources become more critical, the competing interests for water on that river are going to be intense, and we need to make certain that we utilize it to the very best of everybody's needs.

It would be a terrible time to deauthorize that project, and I will steadfastly resist that effort, both in committee and on the floor.

With that, Mr. Chairman, I will submit my total statement for the record and welcome—I didn't know there was anybody from Louisiana here. I thought they were all from Arkansas. [Laughter.]

Thank you for coming, all of you, and for the work that you do on all of these projects.

[The statement follows:]

Statement of Senator Dale Bumpers

Mr. Chairman, I am pleased to have this opportunity to welcome the representatives from the various river basin associations and other projects in my state who have come to testify before the Subcommittee on Energy and Water Development this year. Today, members of the Arkansas River Basin Interstate Committee, the Arkansas Red River Commission and the Lower Mississippi Valley Flood Control Association will speak. Tomorrow, Ernest Cunningham, Speaker of the Arkansas House of Representatives, will testify. In addition, testimony has been submitted for the record by representatives of the Ouachita River Valley Association. I want to take this opportunity to commend these groups for their outstanding record of dedicated service and farsighted efforts to enhance our precious water resources, and to express my strong support in their behalf.

All of the projects under discussion are of tremendous importance to Arkansas and the entire region, and I encourage the Committee to give these requests every consideration. Some of the projects are of particular concern to me at this time, and I would like to mention them briefly.

The Red River project continues to be vitally important, and several funding requests have been made by the Arkansas Red River Commission for various portions of this project. I support these and hope the Committee will provide the levels of funding requested by the Commission. Among the especially critical needs are funding for the continuation of preconstruction planning for comprehensive bank stabilization for the Red River from Shreveport, Louisiana, upstream to Index, Arkansas. The Congress has funded the preconstruction planning for several years, and the Red River Commission has diligently and successfully worked to secure the required non-federal funding. It is essential that this planning phase be completed so that the necessary construction can be undertaken without unnecessary delay. Estimates made by the Corps of Engineers indicate that over 1000 acres of farmland are lost each year in this area as a result of bank caving. We simply cannot afford the continued loss of this valuable natural resource, and I therefore support the Red River Commission's request for $520,000 for this account.

In addition, continued funding for the Red River Emergency Bank Protection project is extremely critical so that every effort may be made to prevent the continued erosion and bank caving on those portions of the river where highways, bridges and other public facilities, as well as farmland, are in danger of destruction. Such devastation has resulted in huge financial losses and has created insurmountable problems for the citizens of the region. This erosion has also caused large quantities of sediment to be deposited in the navigation system downstream. It is therefore imperative that corrective steps be taken now, before delays worsen the problem and lead to more costly and difficult repairs. I wholeheartedly support the Commission's request for an appropriation of $7,700,000 for Fiscal Year 1988 for the Red River Emergency Bank Protection program and for language directing the Chief of Engineers to initiate fully funded contracts for the construction of the Temple Revetment and Brown Realignment measures. I urge the committee to give its favorable consideration to these requests.

Mr. Chairman, it has come to my attention again this year, as in the past two years, that the Corps of Engineers will seek to close out future authority for additional construction on the McClellan-Kerr Arkansas River Navigation System. I have expressed my adamant opposition to this proposed action before, and I fully support the position of the Arkansas River Basin Interstate Committee in remaining vigorously opposed to deauthorization of the project today. The McClellan-Kerr project has been a key factor in the economic growth and development of Arkansas, and its continuation is absolutely essential to our future. Several important studies remain to be undertaken on existing, potentially severe, problems, and many critically important aspects of the project remain to be developed before funding authority is canceled. I therefore urge the Committee's thoughtful consideration and continued support of the McClellan-Kerr Arkansas River Navigation System. In addition, I fully support the Arkansas River Basin Interstate Committee's request for all funding for this project as proposed in the Administration's budget for construction, operation and maintenance.

Also of great importance are funding for the continuation of the Arkansas River Basin Study and for off-channel harbors. The Arkansas River Basin Study is urgently needed to resolve navigation problems, to provide a means of flood reduction, and to address the changing needs of municipal, industrial and agricultural water supply. In recent years, serious problems have arisen due to the conflicting needs of different beneficiaries of the river's resources, and the time has come to make the resolution of these problems a top priority.

Further harbor development is vitally important and will serve national interests by greatly enhancing navigation capabilities in our region and throughout the nation. Three harbor projects in Arkansas which have been in planning for years are currently threatened because of recent policy changes by the Corps of Engineers recommending against federal participation in slackwater harbor development. These harbors -- Helena, Pine Bluff and Yellow Bend (a section 107 project) -- are all critically important to the region and will certainly enhance navigation and other national interests, such as our suffering agricultural economy. They have all been supported by the Corps in past years, and local sponsors have worked diligently under those assurances to secure their required share of the cost. For the government to implement a policy change which would terminate further federal involvement at this point is nothing short of a violation of trust with the citizens of my state. I am following all developments closely and urge the Committee to give serious consideration to the implications of this policy change which drastically alters our nation's water development efforts.

Mr. Chairman, another project I would like to mention is the L'Anguille River Flood Control Project in northeast Arkansas. This project is part of the Mississippi River and Tributaries project, and several years of planning for its development are now complete. With enactment of the Water Resources Development Act of 1986, the L'Anguille project became classified as a "separable element" of the MR & T. However, the testimony to be presented by the Lower Mississippi Valley Flood Control Association notes that because of poor economic conditions in this part of the state, local sponsors cannot meet the "ability to pay" criteria and provide newly-required non-federal costs. This project is designed to solve unique flooding problems in the late summer and early fall which completely ruin mature crops ready for harvest. Because flood control is essential to this region, I hope the Committee will carefully consider the important recommendations made by the Association so that a solution to these serious problems may be achieved.

I am pleased to see that the President's budget proposes funding the Ouachita and Black Rivers project in Arkansas and Louisiana at a level of $4,300,000, which is the full Corps capability for Fiscal Year 1988. This will allow important progress to be made on the last phase of the project for river widenings and bend cut-offs, and I therefore urge the Committee to support this proposal.

Mr. Chairman, the proper management and development of our precious water resources continue to be of tremendous importance for present and future generations. I am proud to have this opportunity to appear today and to give my support in behalf of these many deserving projects. Thank you.

PREPARED STATEMENT OF SENATOR BREAUX, SENATOR COCHRAN, AND CONGRESSMAN DARDEN

Senator JOHNSTON. Those good-looking ones out there are from Louisiana.

I want to put a statement in the record for Senator Breaux. I was going to put a statement in for Senator Shelby, but I see him walking around in the back, along with Senator David Pryor from Arkansas, and I want to also include in the record statements from Senator Cochran and Congressman Darden from Georgia.

[The statements follow:]

STATEMENT OF SENATOR JOHN BREAUX

MR. CHAIRMAN, THANK YOU FOR THE OPPORTUNITY TO SUBMIT FOR THE RECORD MY REMARKS ON BEHALF OF WATER DEVELOPMENT PROJECTS FOR THE STATE OF LOUISIANA DURING THESE HEARINGS ON FISCAL YEAR 1988 APPROPRIATIONS. FOR LOUISIANA, WATER DEVELOPMENT, FOR FLOOD CONTROL, FOR THE ENVIRONMENT, FOR NAVIGATION, FOR PORTS, IS VITAL TO THE ECONOMY AND TO THE SAFETY AND WELL-BEING OF OUR CITIZENS AND THEIR PROPERTY.

I THANK YOU FOR ALLOWING REPRESENTATIVES FROM THE STATE OF LOUISIANA, WHO WILL TESTIFY ON BEHALF OF ITS WATERWAYS, ITS LEVEE BOARDS, ITS WETLANDS, AND ITS PORTS, TO APPEAR TODAY TO PRESENT THEIR VIEWS AND RECOMMENDATIONS. PLEASE EXTEND TO ALL OF THEM YOUR EVERY COURTESY AND GIVE THEIR VIEWS EVERY CONSIDERATION.

DEEPENING OF THE MISSISSIPPI RIVER, THE ATCHAFALAYA BASIN, BANK STABILIZATION AND FLOOD CONTROL IN NUMEROUS AREAS, THE MISSISSIPPI RIVER AND TRIBUTARIES, HURRICANE PROTECTION AND COASTAL AND WETLAND RESTORATION, AS WELL AS EROSION CONTROL, ARE SOME OF THE STATE'S IMPORTANT WATER DEVELOPMENT PROJECTS. FUNDING FOR THESE PROJECTS AND OTHERS IN THE STATE ARE VITAL TO ITS COMMERCE, ITS ENVIRONMENT, AND THE SAFETY AND WELL-BEING OF ITS CITIZENS.

THERE IS ONE PROJECT, IN PARTICULAR, WHICH I WISH TO CALL TO THE SUBCOMMITTEE'S ATTENTION, THE RED RIVER NAVIGATION PROJECT, TO WHICH THE ADMINISTRATION HAS BEEN PERSISTENT IN ITS OPPOSITION. I SUPPORT THE PROJECT. IT HAS MY FULL AND STRONG SUPPORT. I THANK THE SUBCOMMITTEE, MR. CHAIRMAN, FOR ITS SUPPORT FOR THE PROJECT AND FOR ENABLING THE PROJECT TO MOVE FORWARD IN SPITE OF OPPOSITION TO IT.

WE NEED TO CONTINUE MAKING PROGRESS AND TO KEEP THE PROJECT MOVING FORWARD, MR. CHAIRMAN. IN ADDITION, WE MUST ESTABLISH A SET, PREDICTABLE SCHEDULE FOR COMPLETION OF THE PROJECT AND DEDICATE OURSELVES TO COMPLETING IT AT THE EARLIEST POSSIBLE DATE.

CONGRESS HAS SPOKEN CLEARLY AND EMPHATICALLY THAT THE PROJECT IS TO MOVE FORWARD. THAT MESSAGE FROM THE CONGRESS, WHICH I HAVE SUPPORTED, IS SIGNIFICANT FOR THE PROJECT. FUNDING FOR IT WHICH

WOULD HELP TO ESTABLISH A SET SCHEDULE FOR CONSTRUCTION AND FOR COMPLETION AT THE EARLIEST POSSIBLE DATE WOULD BE MOST BENEFICIAL. THESE ARE THE KEYS TO COORDINATING SUCCESSFULLY WITH THE OTHER EFFORTS ASSOCIATED WITH RED RIVER NAVIGATION, INCLUDING PORT DEVELOPMENT AND COMMERCIAL PLANNING AND DEVELOPMENT.

THESE BENEFITS, WHEN COMBINED WITH THOSE DERIVED FROM OTHER RED RIVER ELEMENTS, INCLUDING EMERGENCY BANK PROTECTION AND LEVEE AND BANK STABILIZATION, PLAY A CRITICAL ROLE FOR FLOOD CONTROL, FOR AGRICULTURAL PROTECTION, FOR CLEAN WATER RESOURCES, AND FOR ECONOMIC DEVELOPMENT. TOGETHER, THESE BENEFITS WARRANT CONTINUED PROGRESS FOR THE PROJECT AND ITS COMPLETION AT THE EARLIEST POSSIBLE DATE. BENEFITS FROM THE PROJECT ARE NATIONAL AS WELL AS REGIONAL.

MR. CHAIRMAN, I ASK THAT YOU AND THE SUBCOMMITTEE WORK CLOSELY WITH OFFICIALS WHO WORK ON BEHALF OF THE RED RIVER PROJECT AND WITH OFFICIALS FROM LOUISIANA WHO ARE HERE ON BEHALF OF ALL THE STATE'S WATER DEVELOPMENT PROJECTS. THANK YOU FOR ALLOWING THEM THE OPPORTUNITY TO TESTIFY BEFORE YOU AND PLEASE GIVE THEIR VIEWS AND RECOMMENDATIONS YOUR EVERY CONSIDERATION AND ATTENTION.

STATEMENT OF SENATOR THAD COCHRAN

Mr. Chairman, this afternoon's hearing is very important to me for several reasons. In addition to serving as a Senator from the State of Mississippi, and a member of this subcommittee, I have the privilege to serve this year as President of the Lower Mississippi Valley Flood Control Association.

The Lower Mississippi Valley Flood Control Association has served the people in the valley continuously for the past fifty-two years. During those years, they have appeared before this committee to request appropriations for the Mississippi River and Tributaries Project, which was authorized by Congress in 1928. I do not need to tell the distinguished members of this subcommittee of the benefits to the nation of this project, for you have been instrumental in its continuation.

The association comes before us today recognizing the responsibilities of this subcommittee, and endorsing the efforts to utilize the taxpayers' dollars in a manner that will do the most overall good.

The representatives who will present testimony for the association today, in the order that they will appear, are:

T. M. Simmons	Chairman, Executive Committee, Lower Mississippi Valley Flood Control Association; and President, Yazoo-Mississippi Delta Levee Board, Clarksdale, Mississippi.
Burrell B. Fair	Chief Engineer, St. Francis Levee District of Arkansas, West Memphis, Arkansas.
David Solomon	President, White River Drainage District of Phillips and Desha Counties, Helena, Arkansas.
Joe F. Mooney	Chief Engineer, Yazoo-Mississippi Delta Levee Board, Clarksdale, Mississippi.
Curtis Patterson	Deputy Chief Engineer, Louisiana Department of Transportation and Development, Office of Public Works, Baton Rouge, Louisiana.

Thank you, Mr. Chairman.

STATEMENT OF U.S. REPRESENTATIVE GEORGE (BUDDY) DARDEN FROM GEORGIA

Mr. Chairman, Members of the Subcommittee, and distinguished guests:

Today, I join other representatives of communities along the Coosa-Alabama river system of Georgia and Alabama in urging allocation of sufficient funds to maintain improvements already made to that waterway, and to continue its development. The Coosa-Alabama project provides an outstanding opportunity to promote economic growth in the heart of the Southeast.

First of all, the continued expansion and sustained vitality of this river system will generate thousands of jobs -- both in construction and operation -- over coming decades.

It also will, through the creation of a more competitive shipping industry, contribute to lower freight rates for agricultural and industrial commodities produced in the central and southern United States. This should, in turn, lower product prices and help provide the economic adrenelin our nation needs to reassert its competitive posture in world trade.

Furthermore, there will continue to be the additional benefits of flood protection and cost-effective hydroelectric power for millions of residents along the waterway.

I want to commend the leadership of the Coosa-Alabama River Improvement Association, Inc. -- including its Vice President, Mr. B.H. Mooney of Rome, Georgia -- for their foresight and their dedication to this vital component of our region's economic future.

I fully support the funding request submitted by the Association today, and I urge you to give it your greatest consideration.

STATEMENT OF HON. DAVID H. PRYOR, U.S. SENATOR FROM ARKANSAS

Senator JOHNSTON. Senator Pryor, why don't we hear from you first and then we will hear from Senator Shelby from Alabama.

Senator PRYOR. Mr. Chairman, has my senior colleague, Senator Bumpers, already electrified this crowd?

Senator JOHNSTON. He said you didn't care enough to come. [Laughter.]

Senator PRYOR. As I was walking down the hall trying to get through this crowd, I heard everybody laughing, so I assumed that he was talking at the time. [Laughter.]

Mr. Chairman, I do thank you, and I have a statement for the record, Mr. Chairman.

Mr. Chairman, I am not going to take the time of all of our witnesses here who have traveled so many miles to be here. But I came here primarily first to thank you and members of this committee, who, over the years, have looked at projects that are in our part of the country with great favor and established those projects as priority projects. We are indebted.

The river and water development in our part of our region has truly been a Godsend, and we cannot slack up in any way now. We have some projects in our state that I visited with you about personally with Senator Bumpers and our delegation.

We have written to you and other members of this committee, Senator Stennis, and we are going to continue fighting for these projects because we think not only are they justified, but we think that for future generations they will prove very, very beneficial for our economy and our quality of life in our region that we want to maintain and make better.

So with that, Mr. Chairman, and without mentioning these projects by name—I have them all in my statement—I would like to ask unanimous consent——

Senator JOHNSTON. We are for them.

Senator PRYOR. Great. I am going to take that as a commitment. Thank you, Mr. Chairman.

Senator Stennis, thank you.

Senator JOHNSTON. Thank you very much, Senator Pryor.

[The statement follows:]

STATEMENT OF SENATOR DAVID PRYOR

Mr. Chairman:

I am pleased once again to appear before this Subcommittee in support of the various citizen support organizations that testify to the need to continue our federal programs in the area of water resource development. I am most acutely interested in those projects and those groups that represent development in my home state of Arkansas, but, as you are well aware Mr. Chairman, I am a strong and loyal supporter of sound water resource projects in other states throughout our country. They are an investment in our nation's future.

It is my honor to appear here today in conjunction with the leadership of four major water development organizations representing needs in arkansas and the southwest. I speak, of course, of the Arkansas River Basin Interstate Committee, The Lower Mississippi Valley Flood Control Association, the Red River Valley Association and the Ouachita River Valley Association. I am proud to say that I have had a long and honorable association with each of these fine organizations, and, I can say, when their leaders speak, they speak for me as well. I hope that all of the Committee Members will carefully consider each of recommendations that the spokesman make.

Mr. Chairman, I have written to you about a specific problem that we in Arkansas are facing with Assistant Secretary Dawson's policies regarding shallow-draft navigation harbors. In short, "he's agin' em." I know the states of Mississippi, Tennessee, Missouri and New York are facing the same problem, because the new water authorization bill we passed last year contains provisions for harbor development in each of those states. I want to take this opportunity to personally thank you, Mr. Chairman, for granting permission for State Representative Ernest Ernest Cunningham of Helena, Arkansas, to testify in support of funding for the Helena Harbor project, which was authorized by P.L. 99-662.

Mr. Chairman, the Helena project is, as you know from my previous correspondence, the number one priority project of its kind in the State of Arkansas. Recently the Arkansas Congressional delegation met in my office with Secretary Dawson to discuss the Helena Harbor. Mr. Dawson made it perfectly clear to all present that this administration had no interest in shallow-draft harbors. Mr. Chairman, I must make a point here. Had H.R.6 not contained the Helena Harbor as an authorized project, I would have been compelled to vote against it. In fact I would have had to work as hard as I know how against its final passage.

Mr. Dawson drove his point home when he informed Senator Bumpers and me at that meeting that if we intend to do anything legislatively about Helena Harbor, it had better be written into the statute. Toward that end, Mr. Chairman, I am here today requesting that this Committee include $1.5 million in the FY 1988 Appropriation Bill for Energy and Water Development for the initiation and completion of all pre-construction design work o Helena Harbor, and, further, Mr. Chairman, I request that the Committee specify that this work be completed by or before October 1, 1988. I have checked with the Army Corps of Engineers on this and the amount needed is correct and the timetable is definitely one that can be met.

A second project I want to bring to your attention, as I do each year because the Secretary's budget zeroes it out each year, is the Red River Emergency Bank Stabilization project. This project is so very important to our interests in Arkansas and Louisiana, both in protecting valuable farmland and the navigation project on that river. Mr. Chairman, it is my recommendation to this Committee that $10 million be included for this project.

Lastly, Mr. Chairman, I want to briefly mention the L'Anguille River Flood Control Project in Eastern Arkansas. This project is a part of the Mississippi River and Tributaries project, but has been classified as a "separable element." You will hear testimony today from representatives of the Lower Mississippi Valley Flood Control Associations regarding this project, the need for it in Arkansas, and it's proper role in the overall MR&T project. I hope this Committee will carefully consider the recommendations of the Association with regard to the L'Anguille River. Flood control is most definitely a priority in this area.

Thank you, Mr. Chairman, for your indulgence. I look forward to working closely with this committee in the coming months, and I particularly am anxious to lend my support on the Senate floor when the time comes.

ALABAMA WATER RESOURCE PROJECTS

STATEMENT OF HON. RICHARD C. SHELBY, U.S. SENATOR FROM ALABAMA

Senator JOHNSTON. Senator Shelby?

Senator SHELBY. Mr. Chairman, I think I will first want to adopt, basically, the words of my friend from Arkansas, Senator Pryor, because he said it well: I, too, want to come before you to thank you for what you have done before for my area of the state, which happens to join yours.

Senator JOHNSTON. Talking about during your election? [Laughter.]

Senator SHELBY. No; for both. I have already thanked you for that, but I want to continue to thank you there. But I want to thank you for the water project priorities that you have seen over the years that have made a heck of an impact in Alabama economically as well as Senator Stennis' home state of Mississippi.

We couldn't do without it. I think it is going to change the quality of life for the better all through that area of the South.

I have confidence in you, Senator Stennis and Senator Bumpers, and your abilities, and I appreciate the chance to come here and briefly just see you.

I have written statements that I want to submit for the record.

Thank you.

[The statements follow:]

STATEMENTS OF CONGRESSMAN RICHARD C. SHELBY OF ALABAMA

Mr. Chairman, I appreciate the opportunity to appear today on behalf of the Alabama-Coosa River System, a system that has already meant much to the growth of Alabama and will continue to be one of the keys to future economic development of the state.

A total of $30,158,000 in operation and maintenance funds has been requested for fiscal year 1988 for upkeep and improvement of the system. This request will allow the following: (1) resume design and engineering work on the Coosa Project, which was suspended in 1983; (2) continue the rehabilitation and added construction of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne; (3) continue the Federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery: (4) maintain the schedule for the Mobile Harbor Deepening project; and (5) continue operation and maintenance of the upstream reservoirs and hydropower plants at Allatoona and Carters Lake in Georgia.

The Alabama-Coosa Waterway project is a solid investment in future productivity and economic progress because by connecting Gadsden, Alabama, and Rome, Georgia, with the Gulf of Mexico, it is projected that the completion of all projects currently on line will make this waterway of service to more than one-half of Alabama's citizens directly. The spin-off of economic benefits cannot be underestimated. Studies of completed waterways such as the Arkansas, the Gulf Intracoastal Waterway, and also of the planned Coosa project, show that the returns fully justify the investment.

Again, Mr. Chairman and Members of the committee, I appreciate the opportunity to appear before this distinguished committee on behalf of the Coosa-Alabama River System.

Mr. Chairman, I appreciate the opportunity to appear today on behalf of the Warrior-Tombigbee Waterway System.

Efficient and reliable transportation of freight on the U.S. inland and intracoastal waterways is of substantial and growing importance to the nation's economy. Barge transporation is ideally suited to high-tonnage shipments of bulk commodities and fuels.

Several thousand farmers from twenty-one Alabama and Mississippi counties ship their grain to Mobile for export via the waterway. There are many other important commodities moving on the Warrior-Tombigbee, as well as the large amounts of coal, steel, and farm products. Various ores, crude and fuel oils, chemicals, aggregates, and wood products comprise the other major elements.

Jobs for many Alabamians are provided in mining, manufacturing, processing, construction and farming enterprises, which are heavily dependent upon waterway transporation.

The operations and maintenance request by the Corps of Engineers for the Warrior-Tombigbee Waterway is $11.7 million to cover the minimum day-to-day operations. However, this amount will not support an on-going program to correct long-standing deficiencies. For example, there are actions which have been going on incrementally for several years, designed to increase the efficiency of dredge material disposal and reduce recurring shoaling. Without additional funds, these actions would have to be deferred or even terminated.

Orderly continuation of these projects is important to ensure the reliability of the waterway, and will surely reduce future maintenance costs. Therefore, I request that the committee will consider an additional capability funding request by the Corps of Engineers when that amount is determined.

Another appropriations item for FY 88 is for new construction in the amount of $11 million for the new Oliver

Lock and Dam. Approval of the full $11 million is essential as this amount will be matched with $11 million from the Inland Waterways Trust Fund to provide the total $22 million required for FY 88. This amount will support the orderly placement of contracts and the accompanying work to replace this one remaining substandard lock on the Warrior-Tombigbee Waterway.

All the homework is complete on the Oliver Lock and its replacement has been authorized. Work began in FY 87 for bank stabilization, and coffer dam construction is underway. The Corps anticipates being ready to place the contract for the lock and dam in early 1988, and to complete the new lock during 1991. If our area is to remain competitive in both national and international markets, we must remove this bottleneck from the system.

Again Mr. Chairman, I appreciate the opportunity to appear before this distinguish committee on behalf of the Warrior-Tombigbee Waterway System. Our inland waterways are a vital component of America's transportation infrastructure, and the Warrior-Tombigbee thoroughfare is of utmost economic value to Alabama. I urge you and the committee to continue funding at the fullest possible extent the Warrior-Tombigbee Waterway project.

Senator JOHNSTON. Thank you, Senator Shelby. I am delighted you could be here with this group today. The people you see in this room are builders. They want to build their states, build navigation areas, but basically, they are interested in building the country and keeping its infrastructure strong.

I dare say that if we took most of the major issues of the day and got people in this room to take a position on them, we would all agree in this room about 95 percent of the time: We would have a strong infrastructure and a strong economy.

I might also tell you that we would be a lot closer to a balanced budget and have a strong national defense, as well.

Senator SHELBY. And a lot of people would be employed, wouldn't they?

Senator JOHNSTON. And we would have a lot of people employed, and we would also have good people elected in the Senate, especially those we got here. [Laughter.]

Senator SHELBY. Thank you.

Senator JOHNSTON. So look around this room and smile at this group, because this is a good group of Americans here, and we are glad to have you here, Senator Shelby.

PREPARED STATEMENTS OF SENATOR HEFLIN AND CONGRESSMAN SONNY CALLAHAN OF ALABAMA

Senator JOHNSTON. Now before I introduce the Lower Mississippi Valley Flood Control Association, and without objection, I want to make part of the hearing record statements submitted by Senator Howell Heflin and Congressman Callahan of Alabama.

[The statements follow:]

Statement of Senator Howell Heflin

ALABAMA WATERWAY PROJECTS

MR. CHAIRMAN, AS YOU AND THE OTHER MEMBERS OF THIS COMMITTEE KNOW, I HAVE A DEEP AND ABIDING INTEREST IN THE DEVELOPMENT OF THE WATERWAY RESOURCES IN ALABAMA AND OUR NATION. I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE YOU TODAY AND JOIN WITH SPOKESMEN FROM THE ALABAMA RIVER DEVELOPMENT ASSOCIATIONS IN SUPPORT OF FUNDS FOR THE CONTINUED AND ORDERLY DEVELOPMENT OF WATER RESOURCES IN ALABAMA.

BECAUSE OF YOUR CROWDED AGENDA, MY REMARKS WILL BE BRIEF. IT WILL BE MUCH MORE BENEFICIAL TO THIS COMMITTEE TO RECEIVE THE VIEW AND RECOMMENDATIONS OF THOSE HERE TODAY FROM THE ALABAMA WATERWAY DEVELOPMENT AUTHORITIES WHO HAVE TRAVELED SO FAR TO PRESENT THEIR CASES TO YOU ON BEHALF OF THEIR RESPECTIVE WATERWAY SYSTEMS. THIS GROUP HERE TODAY IS DEDICATED TO THE PRINCIPLE THAT CITIZENS OF ALABAMA WILL REALIZE AND BENEFIT FROM THE VAST POTENTIAL OF ALABAMA'S RIVERS AND OTHER WATER RESOURCES. I WARMLY COMMEND THEIR TESTIMONIES TO YOU.

MR. CHAIRMAN, WATER IS OUR STATE'S RICHEST AND MOST ABUNDANT NATURAL ASSET. IN FACT, ALABAMA IS BLESSED WITH MORE MILES OF NAVIGABLE WATERWAYS THAN ANY OTHER STATE IN THE NATION.

AS THIS COMMITTEE IS WELL AWARE, INLAND WATERWAYS ARE A VITAL COMPONENT OF AMERICA'S TRANSPORTATION INFRASTRUCTURE. THE AVAILABILITY OF THE EFFICIENT AND RELIABLE BARGE SERVICE IS EXTREMELY IMPORTANT TO THE VIABILITY OF KEY SECTORS OF

THE U.S. ECONOMY AND CERTAINLY THE ECONOMY OF ALABAMA. THE ECONOMIC LIVELIHOOD OF CERTAIN GEOGRAPHICAL AREAS MAY WELL DEPEND ON TRANSPORTATION EFFICIENCIES WHICH ONLY WATERWAYS CAN OFFER IN DELIVERY OF RAW AND VITAL MATERIALS, ACCESS TO DISTANT MARKETS, ECONOMIES OF SCALE AND/OR WATER COMPELLED FREIGHT RATES. FOR ALL OF THESE REASONS AND MORE, THERE IS CLEARLY A BROAD PUBLIC INTEREST IN THE INLAND WATERWAY SYSTEMS WHICH JUSTIFIES THE REQUEST FOR CONTINUED FEDERAL PARTICIPATION.

ALL OF THE PROJECTS FOR WHICH WE ARE SEEKING FUNDS WILL SERVE SEVERAL PURPOSES AT ONCE; NAMELY, BETTER ECONOMIC OPPORTUNITIES, MORE AND BETTER RECREATIONAL OPPORTUNITIES, MORE JOBS AND A BETTER STANDARD OF LIVING. INDEED, THE OVERALL QUALITY OF LIFE IN OUR STATE AND ELSEWHERE WILL BE ENHANCED IF WE FUND THESE PROJECTS AND BRING THEM TO COMPLETE FRUITION.

I AM MOST GRATEFUL TO THIS COMMITTEE FOR ITS INTEREST IN THE FULL DEVELOPMENT OF THE WATER RESOURCES IN ALABAMA. IN ALABAMA, THERE HAVE BEEN BILLIONS OF DOLLARS IN NON-FEDERAL WATER RELATED DEVELOPMENTS OVER THE PAST FIVE YEARS. THIS IS EVIDENCE THAT THE FEDERAL FUNDS ALLOCATED BY THIS COMMITTEE ARE SURELY TRUE INVESTMENTS. WITH YOUR CONTINUED HELP, THE DEVELOPMENTS WILL RETURN RICH DIVIDENDS TO OUR CITIZENS AND WILL CONFIRM THE FAITH AND HIGH EXPECTATIONS OF THIS COMMITTEE.

MR. CHAIRMAN, I CONTINUE TO STAND FIRM IN MY CONVICTION THAT NO PROJECT HOLDS SO MUCH PROMISE FOR THE PEOPLE OF ALABAMA AND OUR NATION AS DOES THE TENNESSEE-TOMBIGBEE WATERWAY. I HAVE BEEN PROUD TO STAND WITH OTHER SUPPORTERS OF THE WATERWAY IN THE FIGHT TO MAKE THE PROJECT A REALITY.

THE RESULTS OF A RECENT STUDY CONDUCTED BY THE ARMY CORPS OF ENGINEERS INDICATE POTENTIAL SHIPMENTS ON THE WATERWAY TO BE 14.5 MILLION TONS DURING FISCAL YEAR 1987, THE FIRST FULL YEAR OF OPERATION. THIS ESTIMATE OF TONNAGE REFLECTS CURRENT ECONOMIC CONDITIONS INCLUDING A GREATLY DEPRESSED EXPORT COAL MARKET AND SLUMPS IN WATERWAY USE NATIONWIDE. IN ADDITION TO THESE ECONOMIC FACTORS, THE 18 MONTH EARLY OPENING FOUND SHIPPERS, IN MANY INSTANCES, NOT FULLY PREPARED TO USE THE WATERWAY FOR CONTRACTUAL AND OTHER REASONS.

MR. CHAIRMAN, I AM SURE YOU WILL RECALL THAT TRAFFIC ON THE MCCLELLAN-KERR WATERWAY WHICH OPENED IN THE EARLY 1970'S, ALSO GOT OFF TO A SLOWER START THAN EXPECTED. HOWEVER, AS SHIPPERS BEGAN ADJUSTING TO THAT NEW WATERWAY, TONNAGES BEGAN INCREASING DRAMATICALLY, AND WITHIN A FEW YEARS EXCEEDED PREVIOUS ESTIMATES. I HAVE EVERY REASON TO BELIEVE THAT THE TENN-TOM EXPERIENCE WILL BE JUST AS ENCOURAGING.

FOR EXAMPLE, WOOD PRODUCTS ARE BEING SHIPPED ON THE TENN-TOM WHICH WERE NOT ANTICIPATED ONLY A FEW YEARS AGO. ALSO, CHEMICAL SHIPMENTS HAVE BEEN MUCH GREATER THAN EXPECTED.

OTHER WATERWAY-RELATED ECONOMIC ACTIVITIES ARE OCCURING IN THE TENN-TOM REGION. FIFTEEN PORTS, BOTH PUBLIC AND PRIVATE, HAVE BEEN BUILT ALONG THE WATERWAY AND ARE IN OPERATION. SEVERAL MORE PORTS HAVE BEEN ANNOUNCED. I WOULD ALSO STATE THAT RECREATIONAL USAGE ON THE LAKES AND CANALS ALONG THE TENN-TOM HAS BEEN VERY HEAVY AND IS STEADILY INCREASING.

MR. CHAIRMAN, I URGE THE COMMITTEE TO APPROVE THE BUDGET REQUEST FOR THE OPERATION AND MAINTENANCE FUNDS OF THE TENNESSEE-TOMBIGBEE WATERWAY.

COOSA-ALABAMA WATERWAY AND MOBILE HARBOR

MR. CHAIRMAN, THANK YOU FOR THIS OPPORTUNITY TO AGAIN APPEAR BEFORE THIS COMMITTEE ON BEHALF OF FUNDS FOR THE COOSA-ALABAMA WATERWAY AND MOBILE HARBOR.

THE PRESIDENT'S BUDGET PROPOSAL FOR FISCAL YEAR 1988 CALLS FOR $ $4.5 MILLION FOR OPERATION AND MAINTENANCE OF THE COOSA-ALABAMA RIVER PROJECT. FOR OVER 11 YEARS THE ALABAMA RIVER NAVIGATION PROJECT HAS LANGUISHED DUE TO MANY FACTORS. I WOULD LIKE TO STRESS THE NEED FOR AN ADDITIONAL $2 MILLION ABOVE THE PRESIDENT'S BUDGET. THE BUDGET PROPOSAL IS A SERIOUS DEFICIENCY WHICH COULD THREATEN THE FUTURE OF EFFICIENT AND RELIABLE WATER COMMERCE.

THE URGENCY OF THIS PROJECT STEMS FROM THE MULTITUDE OF CHRONIC NAVIGATION PROBLEMS WHICH HAVE BEEN ENCOUNTERED ANNUALLY BY USERS OF THE ALABAMA RIVER. ANY REVENUES LOST DUE TO THE UNRELIABILITY OF THE NAVIGATION CHANNEL COULD DO

MUCH TO SPUR ECONOMIC GROWTH IN THE REGION. THEREFORE, THE CHANNEL MUST BE REHABILITATED TO KEEP THE INVESTMENT IN THE ALABAMA RIVER ONE WHICH WILL PAY HIGHER DIVIDENDS IN THE FUTURE.

A TOTAL SUM OF $5.0 MILLION IS NEEDED TO PROCEED WITH THIS PROJECT AFTER IT IS APPROVED. WITH THIS REQUESTED LEVEL OF FUNDING THE CORPS OF ENGINEERS SHOULD BE ABLE TO BEGIN WORKING AFTER A RECORD OF DECISION IS SIGNED BY THE DISTRICT ENGINEER IN JULY, 1987.

THE PRESIDENT'S BUDGET ALSO REQUESTS OPERATION AND MAINTENANCE FUNDS IN THE AMOUNT OF $13.8 MILLION FOR 5 MAJOR PROJECTS ALONG THE COSSA-ALABAMA WATERWAY. THE 4 PROJECTS INCLUDE MILLERS FERRY LOCK AND DAM, ROBERT F. HENRY LOCK AND DAM, ALLATOONA LAKE, AND CARTERS LAKE. THESE FACILITIES AND REACHES ALONG THE RIVER SYSTEM MUST BE MAINTAINED SO THAT POWER PLANT OUTPUT AND NAVIGATION WILL OPERATE AT PEAK EFFICIENCY. I WOULD ADD, MR. CHAIRMAN, THAT THE COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION HAS STATED THAT THE OPERATIONS AND MAINTENANCE BUDGET SUBMITTED BY THE PRESIDENT ADEQUATELY SUPPORTS THE NEEDS FOR THE REMAINDER OF THE PROJECTS AS INDICATED.

THE PROSED BUDGET FOR FISCAL YEAR 1987 ALSO REQUESTS $7.9 MILLION FOR OPERATION AND MAINTENANCE FOR MOBILE HARBOR. THE WITNESSES PRESENT TODAY WILL PROVIDE THE JUSTIFICATION FOR APPROVAL OF THESE MONIES FOR MOBILE HARBOR. THE PORT OF MOBILE IS ALABAMA'S ONLY SEAPORT AND IS CERTAINLY ONE OF THE NATION'S GREATEST NATURAL HARBORS. THE PORT OF MOBILE IS ALSO STRATEGICALLY LOCATED AND FOR MANY

YEARS HAS RANKED AMONG THE TOP 10 PORTS IN THE UNITED STATES.

MR. CHAIRMAN, I URGE YOU AND OTHER MEMBERS OF THE COMMITTEE TO APPROVE THE REQUEST PRESENTED BY THE COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION.

WARRIOR-TOMBIGBEE WATERWAY

MR. CHAIRMAN, I WOULD LIKE TO THANK YOU FOR THIS OPPORTUNITY TO AGAIN APPEAR BEFORE THE COMMITTEE ON BEHALF OF FUNDS FOR THE WARRIOR-TOMBIGBEE WATERWAY.

IT IS MY UNDERSTANDING THAT THE PRESIDENT'S BUDGET FOR THE 1988 FISCAL YEAR CALLS FOR $11.7 MILLION IN OPERATION AND MAINTENANCE FUNDS FOR THE WARRIOR-TOMBIGBEE RIVER SYSTEM. MR. CHAIRMAN, THIS FIGURE SHOULD COVER THE COST OF DAY-TO-DAY OPERATIONS, BUT WOULD NOT SUPPORT AN ON-GOING PROGRAM TO CORRECT THE LONG-STANDING DEFICIENCIES. THERE ARE ACTIONS WHICH HAVE BEEN GOING ON INCREMENTALLY FOR SEVERAL YEARS, DESIGNED TO INCREASE THE EFFICIENCY OF THE DREDGE MATERIAL DISPOSAL AND REDUCE RECURRING SHOALING. WITHOUT ADDITIONAL FUNDS, THESE ACTIONS WOULD HAVE TO BE DEFERRED OR TERMINATED. ORDERLY CONTINUATION OF THIS PROGRAM IS ESSENTIAL TO ENSURE THE EFFICIENCY AND RELIABILITY OR THE WARRIOR-TOMBIGBEE WATERWAY. I FEEL THAT THE COMMITTEE WOULD AGREE WITH ME THAT CONTINUATION OF THIS PROGRAM TODAY WILL SURELY REDUCE FUTURE MAINTENANCE COSTS. THEREFORE, I WOULD LIKE TO ASK FOR $4 MILLION MORE TO COVER THESE COSTS.

A SECOND ITEM OF EXTREME IMPORTANCE IS FUNDING FOR NEW CONSTRUCTION OF THE REPLACEMENT LOCK AT THE OLIVER LOCK AND DAM ON THE WARRIOR RIVER NEAR TUSCALOOSA. THE CORPS OF ENGINEERS HAS REQUESTED $11 MILLION FOR THE NEW OLIVER LOCK. THIS AMOUNT WILL SUPPORT THE ORDERLY AND TIMELY PLACEMENT OF CONTRACTS AND THE ACCOMPANYING WORK TO REPLACE THIS ONE REMAINING SUBSTANDARD LOCK ON THE WARRIOR-TOMBIGBEE WATERWAY. APPROVAL OF THE FULL $11 MILLION IS ESSENTIAL AS THIS AMOUNT WILL BE MATCHED WITH $11 MILLION FROM THE INLAND WATERWAYS TRUST FUND TO PROVIDE THE TOTAL $22 MILLION REQUIRED FOR FY88.

I HAVE HAD THE OPPORTUNITY TO RELAY A BRIEF HISTORY OF THE WILLIAM BACON OLIVER LOCK AND DAM TO THIS COMMITTEE ON SEVERAL OCCASIONS IN THE PAST. I CANNOT PASS UP THIS OPPORTUNITY AGAIN.

IRONICALLY, MR. CHAIRMAN, THE OLIVER LOCK AND DAM WAS THE FIRST STRUCTURE CONSTRUCTED UNDER THE MODERNIZATION PROGRAM WHICH CONTEMPLATED THE CONSTRUCTION OF 5 NEW LOCKS AND DAMS TO REPLACE THE ORIGINAL SYSTEM OF 17 DAMS AND 18 LOCKS WITH THE EXCEPTION OF THE UPPERMOST STRUCTURE IN THE SYSTEM, NAMELY, THE JOHN HOLLIS BANKHEAD LOCK AND DAM. TIME AND PROGRESS, HOWEVER, HAVE MADE THE OLIVER LOCK OBSOLETE AS EVIDENCED BY THE CHRONIC BARGE CONGESTION AT THE LOCK WHOSE DIMENSIONS ARE ONLY 95FT X 460FT. A NEW LOCK WITH STANDARD DIMENSIONS IS URGENTLY NEEDED IF TRAFFIC ON THIS BUSY RIVER SYSTEM IS TO CONTINUE UNIMPEDED.

I URGE THE COMMITTEE TO APPROVE THE REQUEST THAT I AND MEMBERS OF THE WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION HAVE SET FORTH TODAY.

MR. CHAUIRMAN, IN MY PREVIOUS TESTIMONIES ON THE TRI-RIVERS SYSTEM, I HAVE TRIED TO STRESS UPON THIS COMMITTEE THE SEVERE NAVIGATION PROBLEMS WHICH HAVE EXISTED ON THE SYSTEM. THOSE PROBLEMS WERE PARTICULARLY TROUBLESOME DURING PERIODS OF LOW RIVER FLOW, ESPECIALLY IN 1986, WHEN THE REGION HAD THE WORST DROUGHT IN 100 YEARS.

THERE WAS NO RIVER TRAFFIC FOR THREE AND ONE-HALF MONTHS,BUT NONETHELESS THE ACF (APALACHICOLA-CHATTAHOOCHEE FLINT) WATERWAY HANDLED 970,651 TONS OF COMMERCE WHICH WAS THE THIRD HIGHEST TOTAL IN THE LAST NINE YEARS.

ECONOMIC STUDIES SHOW THAT THIS COMMERCIAL TRAFFIC HAS CREATED MORE THAN 1,000 JOBS, $18 MILLION IN PERSONAL INCOME AND $1.5 MILLION IN STATE AND LOCAL TAXES ALONG THE WATERWAY.

MR. CHAIRMAN, I THINK THESE NUMBERS MAKE IT CLEAR THAT MAINTAINING A VIABLE AND ACTIVE WATERWAY IS VITAL TO THE ECONOMIC WELL BEING OF THIS AREA. I THINK THAT THE COMMITTEE WOULD ALSO AGREE WITH ME THAT THESE FIGURES INDICATE THAT MONIES APPROPRIATED TO THE TRI-RIVERS SYSTEM HAVE BEEN A GREAT INVESTMENT OF FEDERAL MONIES.

THE PRESIDENT'S BUDGET REQUEST FOR THE 1987 FISCAL YEAR IS $6 MILLION FOR OPERATION AND MAINTENANCE FUNDS ON THE APALACHICOLA-CHATTAHOOHEE-FLINT WATERWAY. THE TRI-RIVER WATERWAY DEVELOPMENT ASSOCIATION ENDORSES THIS REQUEST. I, TOO, ENDORSE THEIR REQUEST.

MR. CHAIRMAN, THE TRI-RIVERS WATERWAY DEVELOPMENT ASSOCIATION ALSO ENDORSES THE ADMINISTRATION'S RECOMMENDATION TO APPROPRIATE $320,000 TO THE CORPS TO CONTINUE ITS BASIN-WIDE "308" STUDY. THIS STUDY WILL ALLOW THE CORPS OF ENGINEERS TO RESOLVE ISSUES IDENTIFIED IN THE 1983 MEMORANDUM OF AGREEMENT BY THE THREE STATES.

MR. CHAIRMAN, I URGE THE COMMITTEE TO APPROVE THE REQUEST SET FORTH TODAY FOR OPERATION AND MAINTENANCE FUNDS AND THE REQUEST FOR THE SURVEY AND STUDY FUNDS NEEDED TO BEGIN THE QUEST TOWARD MAINTAINING THE CONGRESSIONAL AUTHORIZED NAVIGATION CHANNEL.

THANK YOU, MR. CHAIRMAN.

STATEMENT OF U.S. REPRESENTATIVE SONNY CALLAHAN OF ALABAMA

MOBILE BAY AREA PROJECTS

Mr. Chairman, I am pleased to be able to submit my request for fiscal year 1988 funding for projects in the Mobile Bay area.

I am deeply grateful for this subcommittee's assistance in recent years to authorize and fund deepening of the Mobile Harbor channel. The State of Alabama is committed to the Harbor deepening project, and it is encouraging that the Administration has requested $16.2 million in construction funds for the project in FY 1988. I urge the subcommittee to approve that request so that we can move ahead with this critical work. In the meantime, it is imperative that we continue to provide adequate operation and maintenance in Mobile Harbor. I request $8,995,000 for that purpose.

Authorization of the flood control project for Three Mile Creek in Mobile was given in last year's water resources bill. The Administration has requested $5 million for construction of the flood control project, and I hope you will see fit to approve that full amount.

The Corps of Engineers has been studying the feasibility of deepening the Bayou La Batre Channel for several years. Thanks to this committee, that study has been fully funded. The coastal area of Alabama has experienced a great deal of oil and gas exploration activity and this increased activity has further pointed to the need for this channel improvement and I am hopeful that the Corps study will find the project to be justified.

The Water Resources Act of 1986 also authorized a program for mitigation of losses associated with the Tennessee-Tombigbee Waterway. I very strongly support that program which prohibits taking of property from unwilling sellers. In Alabama, property would be acquired in the Mobile-Tensaw delta area and would be managed by the State of Alabama. 18,000 acres are currently available in the delta from willing sellers, and local sportsmen are very enthusiastic about protecting the delta. I request that $10 million be appropriated in fiscal year 1988 to purchase land in Alabama and Mississippi.

Most of our needs in the Mobile area have to do with vital ongoing maintenance activities. Our major industries, as well as commerce from other areas of the nation, are dependent on an efficient waterway system for the transportation of various commodities. Commercial and recreational fishermen depend on having access to fishing areas in authorized channels in Mobile Bay and the Gulf, and they depend on having reliable access to safe harbors. These are just a few of the reasons why maintenance activities are so important. I urge the committee's consideration of the Corps' full operation and maintenance capabilities on these projects: Gulf Intracoastal Waterway, $6,302,000; Dog and Fowl Rivers, $131,000; Perdido Pass, $958,000; Dauphin Island Bay, $33,000; Bayou Coden, $485,000; Fly Creek, $81,000; and Bayou La Batre, $722,000.

TENNESSEE-TOMBIGBEE WATERWAY

Mr. Chairman, it is an honor to come before you to add my enthusiastic support to the Tennessee-Tombigbee Waterway funding request for fiscal year 1988.

Construction of the Tenn-Tom is now complete and traffic is moving on the entire system. Because the waterway opened ahead of schedule and because of shippers' economic problems, commerce on the system was lower than expected in its first year. However, shipments more than doubled in 1986, the second year of operation. Competition from the Tenn-Tom has helped to lower rail rates significantly. Low transportation costs have generated over $300 million in new industries and created over 1100 new jobs. Some of the major commodities using the Tenn-Tom include coal, agricultural products, metals, petroleum products, and paper products. Shipments of wood products and chemicals have exceeded expectations.

Fifteen ports, both public and private, have been built along the Tenn-Tom and more are in the planning stages. Recreational usage on the waterway's lakes and canal has been very heavy. An estimated 4 million visitors used these facilities in fiscal year 1986.

We have invested dearly in the project and must assure its adequate maintenance to protect that investment by allowing efficient commodity movement. The operation and maintenance funding level needed in fiscal year 1988 is $21.755 million. I hope the committee will approve this amount.

COOSA-ALABAMA WATERWAY

Mr. Chairman, members of the subcommittee, I am happy to appear here today to voice my support for the fiscal year 1988 appropriation request for the Coosa-Alabama River System.

For operation and maintenance along the system, $4.950 million is requested in FY 1988 for the Alabama-Coosa River. Additional O&M needs are as follows: $3,242,000 for Millers Ferry Lock and Dam; $2,779,000 for the Robert F. Henry Lock and Dam; $4,884,000 for Allatoona Lake in Georgia; and $2,743,000 for Carters Lake in Georgia. The total funding level, while above the budget recommendation, is necessary to ensure proper maintenance of the river system. Without adequate maintenance, the river will not achieve maximum efficiency and navigation will be impeded. Operation and maintenance work on the Alabama River will keep hydro power plants in good condition and will allow dredging and routine maintenance work to continue to provide us with the most energy-efficient means of transportation. If we do not provide adequate funds for dredging, snagging, spoils disposal, repair of public facilities, and other important maintenance work, we will only have more costly repair bills in the future.

There continues to be great interest in the Coosa River Navigation Project, and the Corps of Engineers is preparing a Record of Decision on the project. In anticipation of that report, $1,600,000 has been requested to study the navigation project. In addition, $2,000,000 has been requested for tthe Lower Alabama Rehabilitation Project. I urge full consideration of these requests.

BLACK WARRIOR, WARRIOR, TOMBIGBEE WATERWAY

Mr. Chairman, I am pleased to be here to voice my support for the fiscal year 1988 funding request for the projects included in the Black Warrior, Warrior, and Tombigbee River System.

The Black Warrior, Warrior, and Tombigbee Waterway is an extremely successful water transportation system. Some 80 percent of the Port of Mobile's coal traffic travels on the waterway. Over 5 million tons of coal move on the system to electric generating plants. Grain from 21 counties in Alabama and Mississippi is shipped to Mobile on the waterway. It also provides substantial movement for commodities such as ore, steel, forest products, petroleum, and chemicals.

The President has requested $11.756 million for operation and maintenance on the Black Warrior, Warrior, and Tombigbee System for fiscal year 1987. The Corps of Engineers' capability is $18.506 million. I believe that adequate operation and maintenance is crucial, and I hope you will approve an appropriate amount in this area.

The locks and dams on this system have been modernized, except for the William Bacon Oliver Lock and Dam. This facility is obsolete and is a bottleneck. Construction of a new lock and dam was authorized in last year's Water Resources Act. The Administration's 1988 budget request includes $11 million in construction funding for the Oliver Lock and Dam, with another $11 million to be funded by the Inland Waterways Trust Fund, for a total of $22 million. I hope this subcommittee will approve this level of construction funding for the Oliver Lock and Dam.

The President's budget also requests $1.350 million for construction of navigation improvements in the vicinity of Jackson, Alabama. I strongly support that recommendation. I also appreciate this committee's assistance with this project last year. The Corps of Engineers is currently studying several options to accomplish these badly-needed improvements and, hopefully, will develop a plan to satisfy all interests.

Thank you, Mr. Chairman, for permitting me to testify in support of the Black Warrior, Warrior, and Tombigbee River System and for your consideration of its needs.

LOWER MISSISSIPPI RIVER FLOOD CONTROL PROJECTS

STATEMENT OF T.M. SIMMONS, CHAIRMAN, EXECUTIVE COMMITTEE, LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION; AND PRESIDENT, YAZOO-MISSISSIPPI DELTA LEVEE BOARD

Senator JOHNSTON. So, now, I'd like to call on my good friend, T.M. Simmons, who is chairman of the executive committee of the Lower Mississippi Valley Flood Control Association.

Mr. Simmons, if you would introduce your group and take it from there?

Mr. GROUGET. Mr. Chairman, if I may, before Mr. Simmons speaks, I am George Grouget. It is my privilege to be the executive vice president of the Lower Mississippi Valley Flood Control Association and it is also my privilege today to introduce our speakers.

The Lower Mississippi Valley Flood Control Association has served the people in the valley, as you well know, sir, for over 52 years. During those years, this association has appeared before this subcommittee to request appropriations for the Mississippi River and tributaries project that was authorized in 1982. I do not need to tell this distinguished group, distinguished members of this subcommittee, of the good that has been accomplished by that project.

I would like to say that it would not have been so without the help of this group. I personally thank you for your time and consideration. It is my pleasure now to introduce the speakers in the order that they will appear, sir.

Our first speaker is Mr. T.M. Simmons, who is the chairman of our executive committee, and also president of the Yazoo-Mississippi Delta Levee Board, with headquarters in Clarksdale, Miss.

Mr. SIMMONS. Thank you, George.

Mr. Chairman, distinguished members of the committee, my name is Mark Simmons, and I am the president of the Yazoo-Mississippi Delta Levee District of Clarksdale, Miss. I am also the chairman of the Lower Mississippi Valley Control Association, and I appear here as spokesman for that association to present the views on funding requirements for the Mississippi River and tributaries project for fiscal year 1988. I will present several items of general interest to all our members, and then call on others of our group to testify concerning specific items.

Mr. Chairman, I assure you we will be as brief as possible. I have submitted a more detailed statement that I request be made a part of the record at the appropriate point.

FUNDING REQUEST

Most, if not all, of you are familiar with our association, and I describe the organization and its objective in my written statement. So I will not repeat that.

We come before you again this year in support of the Mississippi River and tributaries project, which was established by the Flood Control Act of 1921.

We have closely examined the budget request for the Mississippi River and tributaries project for fiscal year 1988 and we find that where funds have been budgeted, that the amounts are at least sufficient for an orderly, economic, and progressive program in the next fiscal year. We are very disturbed because there are parts of the Mississippi River and tributaries project where funds are not budgeted for reasons that are not apparent to us.

We strongly feel that these omissions will prevent the continuation and completion of the overall project at a reasonable rate.

With that as a guideline, we are asking this committee to increase the total budget for the Mississippi River and tributaries project by only $5 million, to be applied to only three items that I will briefly discuss. The three items are all in the construction category, and they are the L'Anguille River project, the Helena Harbor, Arkansas, and the Yazoo Backwater pumping plant.

We are limiting our request to only three items, because we recognize the overall fiscal problems of the federal government and have conscientiously attempted to take into account the need for wise economy.

We have picked the three items I have listed, because they are either ready and waiting for construction to begin or now under construction and, certainly, that work should continue.

L'ANGUILLE RIVER PROJECT, ARKANSAS

The L'Anguille River project is located in northeast Arkansas within the Counties of Poinsett, Cross, Woodruff, St. Francis, and Lee, and was authorized by the Flood Control Act of June 30, 1984.

To date, Congress has appropriated $2.6 million for the reevaluation, for the reevaluation of this project because of the unique flooding problems which occur in the river basin during the late summer and early fall. These floods completely ruined mature crops ready for harvest. This unusual and alarming. The real evaluation report was completed and approved in 1985 and now the detailed engineering studies necessary for the project construction have been completed.

The expenditure of taxpayers' funds in getting the project to this stage would be a tremendous waste if construction funding were not appropriated in fiscal year 1988 and subsequent years to complete the construction of this project as quickly as possible.

It should be pointed out that the U.S. Fish and Wildlife Service and the Environmental Protection Agency have both approved the Corps of Engineer's plan of construction for this project. We request an appropriation of $1.5 million, specifically to be used to initiate construction of the L'Anguille River project, and Mr. Burrell Fair will address this matter in more detail.

The L'Anguille Improvement District has filed a more detailed statement on this project.

HELENA HARBOR, ARK.

Section 601 of Public Law 99–662 authorizes the Secretary of the Army to execute the construction of Helena Harbor, located on the lower Mississippi River in Phillips County, Ark.

Included in this authorization are certain requirements imposed on the local citizens and the state of Arkansas. The local citizens have taken the necessary steps to meet those requirements only to find no federal funds in the budget.

Instead, they hear that federal accomplishment of this work is not in order with current policies. This and other backwater harbors along the lower Mississippi River are needed to create jobs at the grassroots level and keep people from leaving rural America.

We are requesting an appropriation of $500,000 with appropriate action to ensure that the Helena Harbor construction proceeds as authorized by Congress.

Mr. David Solomon will address this matter in more detail, and we have submitted a statement for the record.

YAZOO BACKWATER PUMPING PLANT

We all know that floods are hazardous to life and destructive to property, and that undisputed fact leaves us with a serious problem in the lower end of the Yazoo basin in Mississippi known as the Yazoo Backwater project.

Congress has recognized this problem and enacted the Flood Control Act of August 15, 1941. They authorized the construction of a project designed as the Yazoo Backwater project, which included levees, floodgates, and a pumping plant.

Even though authorized in 1941, no serious work was done on this project until 1973, a period of 32 years. After the 1973 flood, in which over 500,000 acres in the Yazoo basin were flooded for up to 3 months, great energies were expended and the levees and floodgates were completed.

Still under construction is a vital and essential and total required part of the overall project, and that is the pumping plant that must be in place to remove the floodwaters that cannot drain from the affected area.

The present hazardous condition of the Yazoo Backwater area is largely due to the protection that has been afforded to other areas of the Alluvial Valley on both sides of the Mississippi River.

As diversionary streams were constructed, floods happening between them was resulting in increased flood heights. Their increased heights enlarged the affected area and increased the frequency and duration of the floods.

The area has, since the organization of the levee district, borne its share of the cost of protection to the areas above but with increased hazards to itself. It has survived on the expectancy of eventually receiving a fair share of protection for which it has so generously paid.

Hope has been too often deferred, and since passage of Public Law 99-622, that hope has almost faded from view.

It is now quite apparent to us that only members of this committee can save this vitally needed and too-long-delayed project. It is for these reasons that we are requesting an appropriation for fiscal year 1988 in the amount of $3 million be made for the construction of the Yazoo Backwater pumping plant and that appropriate language be applied that will ensure the construction already initiated be continued in an uninterrupted manner to completion.

Mr. Joe Mooney will address this matter in more detail. We have submitted a statement by the commissioner of the Mississippi Levee Board that we request be made a part of the record.

In closing, I would like to emphasize our belief that water resources projects with proven merits are not a drain on the federal budget but are investments which have already or will return to the taxpayers a generous return.

The Mississippi River and tributaries project more than paid for itself in reduced monetary loss and only one flood, not to mention the reduction in human suffering.

We believe that decreased spending for such proven projects will contribute to the economic problems of our country, not help solve them. The economics related to water transportation and the importance of flood protection for our agricultural and industrial interests in the lower valley are of extreme importance. It is our sincere belief that completion of the Mississippi River tributaries project is needed as quickly as possible to avoid the increased costs that are likely to incur through inflation.

It is sound economics to protect the federal and local funds already invested in the project. Completion of this project would allow the full development of the agricultural and industrial potential of the lower valley. Such development will add to the job market, increase the gross national product of this great country, and improve the health and wellbeing of the citizens of the valley and the investment in America.

These are the real and tangible long-term benefits which will be the direct results of project completion.

Mr. Chairman, with your permission, we will proceed with other witnesses, and I appreciate very much the committee's kind attention.

Senator JOHNSTON. Thank you very much for an excellent statement, Mr. Simmons.

[The statement follows:]

STATEMENT OF T.M. SIMMONS, PRESIDENT, YAZOO-MISSISSIPPI DELTA LEVEE BOARD

Mr. Chairman and distinguished members of the Committee, my name is Mark Simmons. I am the President of the Yazoo-Mississippi Delta Levee District of Clarksdale, Mississippi. I am also the Chairman of the Executive Committee of the Lower Mississippi Valley Flood Control Association and I appear here as spokesman for that Association to present their views on the funding requirements for the Mississippi River and Tributaries Project for Fiscal Year 1988. I will present several items of general interest to all our membership and then call on others of our group to testify concerning specific items.

As most of you know, the Lower Mississippi Valley Flood Control Association is an agency composed of Levee Boards, Drainage Districts, Port Commissions, Municipalities and other local units of government of the seven states bordering on the lower Mississippi River, having responsibility at the local level for flood protection, drainage, navigation and harbor development, in the States of Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi and Louisiana, extending from Cape Girardeau, Missouri to the Gulf of Mexico. Our Association has, for well over fifty years, worked closely with the Congress, the Corps of Engineers and other governmental agencies to promote adequate flood protection along the Lower Mississippi River, to provide adequate run-off and drainage of flood and surface waters, to develop harbor facilities, and to encourage greater use of the river as an artery of transportation. We provide the means for all the people of our great Valley to speak and act jointly on all these problems and concerns.

We have closely examined the budget request for the MR&T Project for Fiscal Year 1988 and we find that where funds have been budgeted that the amounts are at least sufficient for an orderly, economic and progressive program in the next fiscal year. We are very disturbed because there are parts of the MR&T Project where funds are not budgeted for reasons that are not apparent to us. We strongly feel that these omissions will prevent the continuation and completion of the overall project at a reasonable rate.

We also believe that as responsible individuals and as conscientious public officials we must face the fact that sometimes we must tighten our belts. We cannot, in good faith, urge economy on the one hand and ask for unreasonable expenditures on the other. This, then, is a bare bone asking which represents not what we need but what we think is vital to the Nation.

With that as guidance we are asking this Committee to increase the total budget for the MR&T Project by only $5,000,000 to be applied to only three items that I will briefly discuss.

The three items are all in the construction category and they are the L'Anguille River Project, the Helena, Arkansas Harbor and the Yazoo Backwater Pumping Plant. We are limiting our request to only three items because we recognize the overall fiscal problem of the Federal government and have conscientiously attempted to take into account the need for wise economy.

We have picked the three items I've listed because they are either ready and waiting for construction to begin or are now under construction and certainly that work should continue.

The L'Anguille River Project is located in northeast Arkansas within the Counties of Poinsett, Cross, Woodruff, St.Francis, and Lee, and was authorized by the Flood Control Act of 30 June 1948.

To date Congress has appropriated $2,611,000 for the re-evaluation of this project because of the unique flooding problem which occurs in this river basin during the late summer and early fall. These floods completely ruin mature crops ready for harvest. This is unusual and alarming.

The re-evaluation report was completed and approved in 1985 and now the detailed engineering studies necessary for project construction have been completed. The expenditure of taxpayers' funds in getting the project to this stage would be a tremendous waste if construction funding were not appropriated in Fiscal Year 1988 and subsequent years to complete the construction of this project as quickly as possible.

It should be pointed out that the U.S. Fish and Wildlife Service and the Environmental Protection Agency have both approved the Corps of Engineers plan of construction for this project.

We request an appropriation of $1,500,000 specifically to be used to initiate construction of the L'Anguille River Project. Mr. Burrell Fair will address this matter in more detail and the L'Anguille Improvement District has filed a more detailed statement on this project.

Section 601 of Public Law 99-662 authorizes the Secretary of the Army to prosecute the construction of Helena Harbor located on the Lower Mississippi River in Phillips County, Arkansas. Included in this authorization are certain requirements imposed on the local interests and the State of Arkansas and the local citizens have taken the necessary steps to meet those requirements only to find no Federal funds in the budget but instead they hear that Federal accomplishment of this work is not in accord with current policies. This and other slack-water harbors along the lower Mississippi River are needed to create jobs at the grass-roots level and keep people from leaving rural America.

We are requesting an appropraition of $500,000 with appropriate action to insure that the Helena Harbor construction proceed as authorized by the Congress. Mr.David Solomon will address this matter in more detail and we have submitted a statement for the record.

We all know that floods are hazardous to life and destructive to property and that undisputed fact leaves us with a serious problem in the lower end of the Yazoo Basin in Mississippi known as the Yazoo Backwater Project.

Congress has long recognized this problem and by passage of the Flood Control Act of August 15, 1941 they authorized the construction of a project designated as the Yazoo Backwater Project which included levees, floodgates and a pumping plant. Even though authorized in 1941, no serious work was done on this project until 1973, a period of 32 years.

After the 1973 flood in which over 500,000 acres in the Yazoo Basin were flooded for up to three months, great energies were expended and the levees and floodgates were completed. Still unconstructed is a vital, essential and totally required part of the overall project and that is the pumping plant that must be in place to remove the flood waters that cannot drain from the affected area.

The present hazardous condition of the Yaozo Backwater area is largely due to the protection that has been afforded to other areas of the Alluvial Valley on both sides of the Mississippi River. As diversionary streams were dammed and levees constructed floods were confined between them with resulting increased flood heights.

There increased heights enlarged the affected area and increased the frequency and duration of the floods. The area has, since the organization of the Levee Districts, borne its share of the cost of protection to the areas above but with increased hazards to itself. It has survived on the expectancy of eventually receiving a fair share of protection for which it has so generously paid. Hope has been too often deferred and since passage of Public Law 99-662 that hope has almost faded from view.

It is now quite apparent to us that only the members of this Committee can save this vitally needed and too-long delayed project.

It is for these reasons that we are requesting an appropriation for Fiscal Year 1988 in the amount of $3,000,000 be made for the construction of the Yazoo Backwater Pumping Plant and that appropriate language be applied that will insure the construction already initiated be continued in an uninterrupted manner to completion.

Mr. Joe Mooney will address this matter in more detail and we have submitted a statement by the Commissioners of the Mississippi Levee Board that we request be made a part of the record.

In closing, I would like to emphasize our belief that water resources projects with proven merit are not a drain on the Federal Budget, but are investments which have already, or will, return to the taxpayer a generous return. The Mississippi River and Tributaries Project more than paid for itself in reduced monetary losses in only one flood, not to mention the reduction in human suffering. We believe that decreased spending for such proven projects will contribute to the economic problems of our country -- not help solve them. The economics related to water transportation and the importance of flood protection for our agricultural and industrial interests in the lower Valley are of extreme importance. It is our sincere belief that to complete the Mississippi River and Tributaries Project as quickly as possible, to avoid the increased costs that are likely to occur through inflation and to protect the Federal and local funds already invested in the project is sound economics. Completion of this project would allow the full development of the agricultural and industrial potential of the lower Valley. Such development will add to the job market, increase the gross national product of this great country and improve the health and well being of the citizens of the Valley. These are the real and tangible long term benefits which will be the direct result of project completion.

Our total request for the Mississippi River and Tributaries Project for Fiscal Year 1988 is $322,000,000. The details of this request are outlined on the tabulation attached.

Mr.Chairman, I appreciate very much the opportunity to present this statement for the record.

LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION
FISCAL YEAR 1988 CIVIL WORKS BUDGET
MISSISSIPPI RIVER AND TRIBUTARIES APPROPRIATION

PROJECT AND STATE	FISCAL YEAR 1988 BUDGET	LMVFCA REQUEST FISCAL YEAR 1988
SURVEYS, CONTINUATION OF PLANNING & ENGINEERING & ADVANCE ENGINEERING & DESIGN		
St.John's Bayou & New Madrid Floodway, MO	572,000	572,000
Eastern AR Region Comprehensive Study	430,000	430,000
Yazoo River Basin, MS	513,000	513,000
Horn Lake Creek & Tribs., MS	211,000	211,000
Atchafalaya Basin (Water & Land Res.), LA	65,000	65,000
Boeuf-Tensas Basin, LA & AR	825,000	825,000
MS & LA Eastaurine Areas, LA & MS	389,000	389,000
Nonconnah Creek, TN & MS	231,000	231,000
Reelfoot Lake, TN	290,000	290,000
Tiptonville, TN	104,000	104,000
Bushley Bayou, LA	105,000	105,000
Eastern Rapides & S. Cent. Avoyelles Parishes,LA	1,350,000	1,350.000
Obion & Forked Deer Rivers,TN & KY	400,000	400,000
Tuscumbia Basin, MS	200,000	200,000
Lower White River, AR (Big Creek & Tribs.)	400,000	400,000
Collection & Study of Basic Data	270,000	270,000
SUBTOTAL-SURVEYS, CONTINUATION OF PLANNING & ENGINEERING & ADVANCE ENGINEERING & DESIGN	6,355,000	6,355,000
CONSTRUCTION		
St.Francis River Basin, MO & AR	9,500,000	9,500,000
Eight Mile Creek, AR	450,000	450,000
L'Anguille River Basin, AR	---	1,500,000
Helena Harbor, AR	---	500,000
West Tennessee Tributaries, TN	5,100,000	5,100,000
Yazoo Basin, MS	27,100,000	27,100,000
Yazoo Backwater Pumping Plant, MS	---	3,000,000
Sardis Lake (Dam Safety Assurance)	2,800,000	2,800,000
Atchafalaya Basin, LA	37,600,000	37,600,000
Atchafalaya Basin Floodway System	3,500,000	3,500,000
Bayou Cocodrie & Tribs., LA	100,000	100,000
MS Delta Region, LA	4,500,000	4,500,000
Tensas Basin, AR & LA	6,100,000	6,100,000
Channel Improvement, IL,KY,MO,AR,TN,MS & LA	84,000,000	84,000,000
Mississippi River Levees, IL,KY,MO,AR,TN,MS & LA	26,500,000	26,000,000
SUBTOTAL-CONSTRUCTION	207,250,000	212,250,000
MAINTENANCE		
SUBTOTAL-OPERATIONS & MAINTENANCE	116,400,000	116,400,000
SUBTOTAL-MISSISSIPPI RIVER AND TRIBUTARIES	$330,005,000	$335,005,000
REDUCTION FOR SLIPPAGE AND SAVINGS	- 13,005,000	- 13,005,000
GRAND TOTAL-MISSISSIPPI RIVER AND TRIBUTARIES	$317,000,000	$322,000,000

ST. FRANCIS BASIN PROJECT

STATEMENT OF BURRELL FAIR, CHIEF ENGINEER, ST. FRANCIS LEVEE DISTRICT

Senator JOHNSTON. Let me tell you, we are running behind, so I hope that we can put the statements in the record and briefly summarize those statements. Please proceed.

Mr. FAIR. Mr. Chairman, my name is Burrell B. Fair. I live in West Memphis, Ark. I am chief engineer of the St. Francis Levee District in Arkansas. I am testifying in behalf of the levee and drainage districts in the entire St. Francis basin in Missouri and Arkansas, which depend upon the major drainage channels included in the St. Francis basin for outlets for the complex drainage system in the basin.

The budget for fiscal year 1988 includes the sum of $9.5 million for the St. Francis basin project. We believe this amount is sufficient to provide orderly progress toward completion of the project and we are not requesting any additional funds.

We are, however, asking that you consider including two items of bridge construction ditch 9 in Missouri in the program for fiscal year 1988. The Corps has indicated that they are capable of putting these two bridges under contract in fiscal year 1988 if funds were made available.

Drainage district officials in the immediate area are anxious to have bridge work done as soon as possible in order to allow for additional channel excavation work on ditch 9.

I believe that a part of the planned land acquisition approved in the budget could be deferred until 1989 without disturbing the orderly progression of work on the project, thus allowing funds for the bridge construction.

L'ANGUILLE RIVER PROJECT, ARKANSAS

I would like to speak briefly about the L'Anguille River project. Mr. Simmons has given the background for it. The problem is that in spite of the fact that all the preliminaries have been done, the reevaluation, the approval by the other federal agencies, the passage of the Water Resources Development Act of 1986 established a deadline of May 1, 1986, after which the appropriation of funds under the old rules and local operation is prohibited.

This is a case where all the preliminaries have been finished, the local sponsors have placed themselves in a position to provide the local cooperation necessary under the rules in existence at the time but are now faced with entirely different requirements.

I appeal to you on the basis of fair treatment of the local sponsors who have made themselves ready to provide the required local cooperation only to find the rules changed as it is able and ready to proceed.

I urge that you recommend inclusion of $1.5 million to begin construction of the L'Anguille project and that you direct that construction be done under the rules for local cooperation which were in effect when the final planning for the project was done.

I appreciate your consideration of our request for these and certainly join the others who have spoken here in thanking you for your kind consideration in the past years of our request, too.

Thank you.

Senator JOHNSTON. Thank you very much, Mr. Fair.

[The statement follows:]

STATEMENT OF BURRELL B. FAIR, LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

SUMMARY

REQUESTING THE APPROPRIATION OF $9,500,000 FOR THE ST. FRANCIS BASIN PROJECT; THE INCLUSION OF BRIDGE CONSTRUCTION ON DITCH 9 IN PLACE OF A PART OF THE LAND ACQUISITION INCLUDED IN THE BUDGET; THE APPROPRIATION OF $1,500,000 FOR CONSTRUCTION FUNDS FOR THE L'ANGUILLE PROJECT AND THE APPROPRIATION OF THE TOTAL AMOUNT OF $322,000,000 FOR THE MISSISSIPPI RIVER AND TRIBUTARIES PROJECT.

My name is Burrell B. Fair, I live in West Memphis, Arkansas and I am Chief Engineer of the St. Francis Levee District of Arkansas. I am testifying in behalf of the Levee and Drainage Districts in the entire St. Francis Basin, Missouri and Arkansas, which depend upon the major drainage channels included in the St. Francis Basin Project for outlets for the complex drainage system in the basin. I know that you are familiar with our system of locally funded and operated Drainage Districts, each limited to work within its own boundaries and dependent upon others for outlets to the St. Francis and Mississippi Rivers.

Over the years since the first authorization for work on the St. Francis Basin Project in 1936, interests in Missouri and Arkansas have cooperated fully with each other in seeking funds and attempting to expedite the work which is so important to the entire basin.

The Budget for FY 1988 includes the sum of $9,500,000 for the St. Francis Basin Project. We believe this amount is sufficient to provide orderly progress toward completion of the project and we are not requesting additional funds. The budgeted amount will provide funds for channel work on Ditches 12 and 29, Big Creek and Upper Buffalo Creek in Arkansas and Ditches 9, 281 and 293, Castor River and Upper Buffalo Creek in Missouri, as well as for the continuation of various channel items already under construction in the basin. Funds will be provided for bridge relocations and alterations needed to make way for future channel construction and for necessary land acquisitions and utility relocations.

Although we are not asking for the appropriation of any funds over the budgeted amount, we do ask that you consider including two items of bridge construction on Ditch 9 in Missouri in the program for FY 1988. The Corps has indicated that they are capable of putting these two bridges under contract in FY 1988 if funds are made available. Drainage District officials in the immediate area are anxious to have the bridge work done as soon as possible in order to allow for additional channel excavation work on Ditch 9. I believe that a part of the planned land acquisition could be deferred until 1989 without disturbing the orderly progression of work on the project, thus allowing funds for the bridge construction.

I would like to speak briefly about the need for the appropriation of funds for the L'Anguille River Project, another item under the MR&T Heading, but one which is not allotted any funds under the FY 1988 Budget. The project was authorized in 1948 and has recently undergone a reevaluation by the Corps of Engineers at a cost of $2,611,000. The reevaluation report and the review reports of the US Fish & Wildlife Service and the Environmental Protection Agency were favorable and the project is ready for the appropriation of construction funds.

The passage of the Water Resources Development Act of 1986 establishes a deadline, May 1, 1986, after which the appropriation of funds under the old rules of local cooperation is prohibited. This is a case where all the preliminaries had been finished, where the local sponsors had placed themselves in a position to provide the local cooperation necessary under the rules in existence at the time, but are now faced with entirely different requirements. The statement which will be filed by Dan Felton III gives full details of the urgent need for funds for this project and makes several points in favor of proceeding with this work under the old rules of local cooperation. I appeal to you on the basis of fair treatment of the local sponsors who have made themselves ready to provide the required local cooperation only to find the rules changed just as they were ready to proceed. I urge that you recommend the inclusion of $1,500,000 to begin construction of the L'Anguille Project and that you direct that the construction be done under the rules for local cooperation which were in effect when the final planning for the project was done.

I appreciate your consideration of my requests for the appropriation of the budgeted amount of $9,500,000 for the St. Francis Basin Project with the changes I have asked for; the appropriation of $1,500,000 for the L'Anguille Project and for the appropriation of $322,000,000 for the Mississippi River and Tributaries Project.

HELENA HARBOR, ARK.

Mr. SOLOMON. Mr. Chairman and members of the committee, my name is David Solomon, and I am from the state of Arkansas and live in Helena. I am president of the White River Drainage District of Phillips and Desha Counties, Ark., and am a member of the executive committee of the Lower Mississippi Valley Flood Control Association. My statement concerns the slack water harbor project at Helena, Ark. The request is made that an appropriation of $500,000 be made for this project in the 1988 budget.

This request is from the people in eastern Arkansas and those across the river in northwest Mississippi, all of whom recognize its need and importance. The project is a direct outgrowth of the concept for harbor and industrial park facilities developed by the Corps of Engineers in the period of 1972–80. Initial studies were authorized May 19, 1972, and the Chief of Engineers by memorandum dated March 28, 1979, recommended it. The final environmental impact statement was completed in June 1980. A feasibility study was financed by the Economic Development Administration for the Corps and completed in 1977, indicating the benefit-cost ratio would be 1.7 to 1.

Private studies which have been made show a higher benefit-cost ratio. All of this culminated in the authorization of the project by

Public Law 99–622. In accordance with this law, nonfederal participation is required, and we can and will provide such.

The Corps indicates the project costs to be $28 million and the local participation will be approximately $16 million. We have commitments for the nonfederal share of the project and can assure this committee and all concerned that it will proceed since a sponsor share is available.

This statement is made in the face of the area affected by this project being one of the most economically depressed in the United States. Out-migration of the population is high. The percentage of people on various assistance programs is among the highest in the nation, as is unemployment. The reason we can deliver is because of the commitment of the state of Arkansas and all of its agencies, the counties and the cities, and, more importantly, the people themselves.

The project consists of a channel approximately 3 miles long and 300 feet wide and 9 feet at low water. The trades material will be used to enhance the Mississippi River levee on the west and to create protection for the project on the east. Forty acres of elevated waterfront sites will be developed as a public use terminal, utilizing truck, rail, and water modes of transportation.

Adjacent to the project on a protected side of the levee, a 3,000-acre industrial park will be developed. This harbor project will be a real plus for transportation. Studies by Arkansas State University and the Arkansas Highway and Transportation Department show this site to be a focal point for eastern and northern Arkansas to both ship and receive goods and is the backbone of the transportation network.

Water transportation is the reason this is the focal point. The site is almost in the geographical center of the United States and the use of water transportation will increase and grow in the future, and more especially when coordinated with truck and rail service. This, as stated, is an authorized project under Public Law 99–662, and the cost-sharing is available for its completion and implementation.

Because there are adjunct economic benefits not directly connected with navigation and improvement of the Mississippi River itself, it should not be any reason for it to be passed over. The region desperately needs the beginning and completion of this harbor facility and a benefit to the entire transportation system of the United States is also most evident. We respectfully urge that the appropriation for this project appear in the 1988 budget.

Thank you.

Senator JOHNSTON. Thank you very much.

YAZOO BASIN PROJECTS

STATEMENT OF NEWMAN BOLLS, CHIEF ENGINEER, BOARD OF MISSISSIPPI LEVEE COMMISSION

Mr. MOONEY. Mr. Chairman, I am Joseph Mooney from Clarksdale, Ark. I am the chief engineer for the Yazoo-Mississippi Delta Levee Board. I will highlight my statement and also the statement of my counterpart, Newman Bolls from Mississippi.

We both support the request of the Lower Mississippi Valley Flood Control Association in the total request for the Mississippi River and tributaries, but we also support particularly the part that refers to the Yazoo basin. The Yazoo basin is located in the northern portion of the state of Mississippi and is primarily a rural area sprinkled with small cities and towns, and the economy of the region is based upon agricultural and light industry.

As a tributary basin of the Mississippi River system, it is vitally affected by the sufficiency of the elements of the Yazoo basin plan.

The Yazoo basin plan is vital to us in the basin because it has a direct impact on the safety of our people, our homes, and our ability to earn a living.

The damages prevented during past flood episodes exceeds manyfold the cost of the work in place when the Corps of Engineers states that the Yazoo basin plan continues to have a benefit-to-cost ratio of 3.1 to 1 for the remaining work.

These benefits, when considered in terms of dollars, are certainly noteworthy, but these benefits when considered in human terms are really heartwarming. They represent people whose lives are no longer in jeopardy; they represent people who are no longer forced from their homes by floods; they represent people who are able to struggle to make a decent living without seeing the forces of nature destroy it all.

Times are tough down our way right now. We are working as hard as we can to make the most of what we have. Your continued support of this project is what is making any progress possible.

We are dependent upon you to fund this work and these projects at a reasonable rate toward completion. The amount recommended in this year's budget for the Yazoo basin will allow most of the items of work to progress at a reasonable and orderly rate. The one exception that we are aware of is the Yazoo pumps portion of the Yazoo backwater project. The proposed budget does not provide enough funds for orderly progress on this item. This long-awaited item makes significant progress toward fulfilling the commitments the federal government has made to our people periodically since 1941. The moneys you have appropriated in recent years allow for letting contracts for the construction of the inlet and outlet channels and the coffer dams.

This initial work is nearly complete, so continuing a reasonable flow of funds to this work will ensure the optimum use of manpower and construction resources.

The leadtime required for the design and fabrication of the pumps and motors will have a tremendous impact on both of these factors.

YAZOO BACKWATER PUMPING PLANT

We respectfuly request that the committee direct the $3 million be allocated specifically for construction on the Yazoo backwater pumps.

Part of this money should be spent for the design and procurement of the pumps and motors. The pumps and motors are on the critical path for the completion of the pump plant and greatly affect the schedule, which can be accomplished.

Even though the pumps will be among the last things placed in the structure, their actual physical design must be determined before the size and the strength of the components of the pump plant structure can be designed and built. Appropriation of the requested additional $3 million will be a wise investment, one which will earn benefits far greater than the cost; one which will result in economics of construction; and one which will keep the promises made to our people.

For these reasons, we respectfully urge the Congress to appropriate $30.1 million for the Yazoo basin during fiscal year 1988 as part of the amount which is necessary for the Mississippi River tributaries project.

I sincerely appreciate this opportunity to appear before you. I am confident that you will give the needs of our people the same consideration as you have given in the years past.

Senator JOHNSTON. Thank you very much.

[The statement follows:]

STATEMENT OF NEWMAN BOLLS, CHIEF ENGINEER, BOARD OF MISSISSIPPI LEVEE COMMISSIONERS

I am Newman Bolls, Chief Engineer, Board of Mississippi Levee Commissioners, Greenville, Mississippi, and I have the privilege of presenting this statement on behalf of that Board and the citizens of this levee district comprising the counties of Bolivar, Washington, Issaquena, Sharkey, Humphreys and Warren in the lower Yazoo Basin in Mississippi.

The Lower Mississippi Valley Flood Control Association will present a general statement in support of $322,000,000 for FY88 for the construction, surveys, advanced engineering and maintenance for the Mississippi River and Tributaries Project. This represents only a $5 million increase over the proposed President's budget for three projects: the Helena, Arkansas Harbor, the L'Anguille River Project in Arkansas, and the Yazoo Backwater Pumping Plant Project in Mississippi. In the case of the first two, these funds are needed to initiate this work, as the spokesman for the states of Arkansas and Missouri will so clearly indicate, and in the case of the Yazoo Backwater Project in Mississippi, these funds are needed to continue the construction of this project that is already underway and which is so vital for the State of Mississippi. We concur in the request as indicated above, but will deal principally with the Yazoo Basin in Mississippi in this report.

The allocations in the President's budget for the Yazoo Basin in Mississippi are as follows:

YAZOO BASIN, MISSISSIPPI

Project		FY88 Budget
Upper Yazoo Projects	$	10,275,000
Tributary Items Except Ascalmore-Tippo-Opossum		8,700,000
Tributary Items		200,000
Demonstration Erosion Control		5,300,000
Big Sunflower River Project Including Steele Bayou		2,400,000
Yazoo Backwater		225,000
Total		27,100,000
Additionally, we request:		
Yazoo Backwater Pumping Plant Project		3,000,000
GRAND TOTAL YAZOO BASIN (Construction)	$	30,100,000

The Yazoo Basin in Mississippi is a unique area and is recognized as being one of the most productive agricultural areas in the entire world. It is highly diversified, however, and does not depend upon agriculture alone for it has great industrial development over the entire area. By being in the alluvial delta of the lower Mississippi River, it is absolutely dependent upon flood control and interior drainage for its very survival. The project as designed is very complex and each item as listed above is an integral part of the whole and they must all be in proper balance and operating efficiently for the project to function as designed. Each of these figures we have stated and recommended are capital investments in the future of this nation and play an increasing role in providing food, fiber and manufactured goods for this nation and the world. More and more stress will be placed upon this area in the future due to the urbanization of the rest of the nation, and it is only through the proper utilization and preservation of this land that the expanded role that is being thrust upon the Yazoo Basin in Mississippi can be fulfilled.

One of the major problems facing the entire central area of the United States is massive soil erosion. Records show that in the course of the year some 200,000,000 tons of sediment are in transport in the Mississippi River at the rate of about 365,000 tons a day and is lost forever. A project underway in the upper reaches of the Yazoo Delta known as the Demonstration Erosion Control Project could have such far-reaching and beneficial effects upon this nation that it is most imperative that this project be continued, expanded and utilized throughout this nation to try to bring this mass erosion problem under control. The President's budget has recommended, and we strongly support, the appropriation of $5,300,000 to continue this project.

The Upper Yazoo Projects are main stream Yazoo and Tallahatchie channel improvement projects which will effectively reduce stages on these two rivers by as much as 5'. This work will benefit several thousand acres of land in seven counties by reducing the frequency and duration of flooding. The President has recommended $10,275,000 which can be effectively used to continue this vital project and we strongly recommend and support this appropriation.

The Big Sunflower River Project which, at the present time, involves only Steele Bayou and Black Bayou, has been recommended for an appropriation of $2,400,000 for FY88. When this project was originally designed, mitigation was proposed for the Swan Lake area which is now the Yazoo Wildlife Refuge and, on a year-round basis, provides shelter and food for vast numbers of migratory water fowl and upland game native to the Yazoo Basin in Mississippi. A major portion of these funds will be used for these mitigation measures and we feel it is highly important and necessary that this important feature of the project be continued and expedited as much as possible. We, therefore, support the recommended appropriation of $2,400,000 for the Big Sunflower River Project in Mississippi.

The most pressing problem and need in our entire area is the Yazoo Backwater Pumping Plant Project. As far back as 1941, Congress recognized with the advice of the U. S. Army, Corps of Engineers, that because of certain decisions that had been made, this area in the lower end of the Yazoo Basin in Mississippi that has been titled the Yazoo Backwater area, was subjected to great additional risk and was, therefore, entitled to special protection. When the Flood Control Act of August 15, 1941 was enacted, Congress authorized the construction of this project and designated it as the Yazoo Backwater Project which included levees, flood gates and a pumping plant. This was the first such project authorized in the lower Mississippi Valley; yet it is still the only one that has not been completed.

The lands on the east bank at the lower end of the Yazoo Basin were continually sacrificed for west bank improvements and protection for those upstream even though this area enjoyed a superiority in land elevation to those over those west bank lands that were receiving protection. Year after year, this area was promised that it would be provided these protections as soon as funds were made available and the other major improvements were completed. We have reached that stage now where these so frequently made promises should and must be fulfilled.

At the present time, the Backwater levee system has been completed, the flood gates at Steele Bayou and Little Sunflower River, though undersized, have been completed as has the major channel improvements above this area, which result in the more rapid discharge of their damaging flood waters into this area. This sacrificed area then must store all of the combined discharge until it can be released by gravity flow which has actually created a man-made impoundment that has doomed this area to continued destruction unless these pumps are installed.

This committee has wisely appropriated funds in 1984 and 1985 for the Yazoo Backwater Pumping Plant Project. The design of this project has been placed on a fast-track schedule and the contract for the construction of the inlet and outlet channel and the cofferdams has been let and are virtually complete at the present time, indicating conclusively to one and all that this project is physically underway. It is imperative that the funds we request in the amount of $3,000,000 be appropriated with proper language being inserted in the bill to ensure that the construction that has already been initiated will be continued in an uninterrupted manner to completion. We are desperate and plead for your direct intervention for it is quite apparent now that only through the actions of this committee can this long-promised, often delayed, but very vital project be saved. Each year that this completion is further delayed, great personal losses occur and the costs are likely to increase. Therefore, we urge and plead most strongly and earnestly that this committee give its most serious consideration to this desperate situation and provide this relief that has now been delayed for forty-five years.

We always appreciate most sincerely the consideration given to us by the members of this committee and for the generosity they have demonstrated in the past.

STATEMENT OF CURTIS PATTERSON, DEPUTY CHIEF ENGINEER, LOUISIANA STATE DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

Mr. PATTERSON. Mr. Chairman, members of the subcommittee, I am Curtis Patterson, the assistant chief engineer for water resources, Department of Transportation and Development, state of Louisiana, and secretary-treasurer of the Association of Levee Boards of Louisiana.

My comments today summarize our written brief as being presented in behalf of the state of Louisiana and the Association of Levee Boards of Louisiana and as a member of the Lower Mississippi Valley Flood Control Association in cooperation with the views and presentation by that agency.

We are in support of the funding requirements proposed by the administration and those requests made by the Lower Mississippi Valley Flood Control Association here today. We are pleased that the all-important work at the Old River complex is now complete, assuring the orderly separation and regulation of the flows of the Mississippi and the Atchafalaya Rivers. It is so near to completion, we understand now that a formal dedication is planned for May 2. We applaud the members of this subcommittee, as well as Congress as a whole, and especially the Louisiana delegation, for their persistent leadership in seeing that funds were provided for accomplishing this critical work.

The Corps of Engineers did an excellent job in accomplishing this massive project in a very timely manner. Downstream from and associated with the Old River Control Structure lies the Atchafalaya Basin Floodway that must carry one-half the projected design flood the latitude of Old River.

This floodway has been under construction since 1982 and is not scheduled for completion before the year 2000. At the present time, the floodway levee system can contain only about 67 percent of its portion of the projected floor. We are, therefore, requesting that Congress approve what has been submitted in the budget. Completion of that levee system and other flood control works throughout the floodway must be accomplished as soon as possible. For similar reasons, we are requesting that you approve the budget for the Mississippi River and tributaries channel improvements.

The project above Louisiana is some 90 percent or more complete but to a much lesser extent in Louisiana, more on the order of 60 to 65 percent.

Continuing development of the upper valley over the decades in addition to natural changes in the river result in increased flows in our state.

Mainline levees must be protected from caving banks throughout the lower river reaches where extremely narrow paths in many areas are the last line of defense against crevaces and failures. There simply is no place left for levee set banks in many areas. The only remedy to stabilize the continually eroding banks is construction of a rail.

Funding levels in the last few years in the Mississippi River channel improvements should not be allowed to decline and the level of spending proposed represents some cutback in that area. Postponement of critical locations will result in higher costs and could cause levee setback situations.

The state of Louisiana supports the full budgeted amount for fiscal year 1988 and urgently requests that it not be decreased, as this work is vital for the river to accommodate these increased flows and to contain the detrimental effects for the natural changes in the river.

Some levees in Louisiana are still below project grade. As you all know, the levees are the main lines of defense against flooding of the Mississippi River.

Our specific concern on the main line levee system of the levee enlargement and slope paving needed at St. Gabriel, White Castle, Portland, and Wait Apple. These do not appear to be included in the proposed works for fiscal year 1988.

To be more specific of what I am referring to, I offer the following on one of these levee problems. During the 1973 flood, a neighboring town, sometimes referred to as Potato Ridge, was hastily built on top of the old existing levee to prevent overtoppling. No other improvements have been made in this area since 1973.

We understand plans and specifications are ready to go, and there are no right-of-way problems. The other levee reaches are in a similar state of existence that I mentioned, and we are not asking that the proposed budget be increased to accommodate these requests.

However, what we are asking is that should funds be freed from planned works that cannot be accomplished during fiscal year 1988 that can be diverted to some of these critical levee needs, it is requested that these levee reaches be considered.

It is certainly requested that these levee reaches be considered in next year's budget, if not accomplished in the coming year.

We wish to thank the members of this subcommittee for their work in getting the levee at Angola, La., incorporated into the federal levee system, and the state of Louisiana will do all it can to provide its federal monetary share in order to bring about its construction.

With the permission of the committee, I would also like to submit for your record a written statement on appropriations for navigation, hurricane protection, and water resource projects in Louisiana other than in the Mississippi, and the Red River basin. This statement supports the President's recommendations for these projects. We will appreciate your consideration of these critical program needs and wish to thank you for allowing us the opportunity to discuss them with you today.

[The statement follows:]

STATEMENT OF OFFICE OF PUBLIC WORKS, LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana in the planning and orderly development of water resources. This statement is presented in behalf of the State of Louisiana and contains endorsements and recommendations for Fiscal Year 1988 appropriations for Louisiana projects in the Mississippi River and Tributaries Project.

The following recommendations are in general support of the budget recommendations of the President for Fiscal Year 1988, with some minor exceptions.

MISSISSIPPI RIVER AND TRIBUTARIES
SUMMARY OF RECOMMENDED APPROPRIATIONS

LOUISIANA PROJECTS	BUDGET ALLOWANCE AND LOUISIANA REQUEST
Construction	
Atchafalaya Basin	$ 37,600,000
Bayou Cocodrie & Tributaries	100,000
Channel Improvements	84,000,000
Mississippi Delta Region Project Caernarvon Structure	4,500,000
Mississippi River Levees	26,500,000
Tensas Basin, AR & LA	6,100,000
Boeuf & Tensas Rivers	(300,000)
Lake Chicot Pumping Plant	(2,645,000)
Red River Backwater Area	(2,700,000)
Tensas-Cocodrie Pumping Plant	(455,000)
Authorized Studies	
Atchafalaya Basin (Water & Land Resources)	65,000
Boeuf-Tensas Basin	825,000
Larto Lake - Saline Lake, LA	-0-
Planning	
Bushley Bayou Area	105,000
Eastern Rapides & South Central Avoyelles Parishes, La.	1,350,000
Miss. & La. Estuarine Areas, LA & MS	389,000
Operation and Maintenance	
Atchafalaya Basin	8,587,000
Bayou Cocodrie & Tributaries	124,000
Bonnet Carre Spillway	522,000
Channel Improvement	58,543,000
Lower Red River - South Bank Levees	65,000
Mississippi River Levees	10,630,000
Old River Control Structure	5,449,000
Red River Backwater Area	1,389,000
Tensas Basin, Boeuf & Tensas Rivers	1,747,000

NOTE:

The projects listed above are only those in Louisiana and directly affecting the State. We realize that there are others outside of Louisiana that are vitally important to the Project and in these areas, we endorse the recommendations of the Lower Mississippi Valley Flood control Association.

ATCHAFALAYA BASIN

(Budget: $37,600,000) (Request: $37,600,000)

This project is a Main Stem component of the flood control plan for the Mississippi River and Tributaries Project. The Mississippi River can safely carry only one-half of the project flood, or 1,500,000 cubic feet per second, below Old River; the other 1,500,000 cubic feet per second must be discharged through the Atchafalaya Basin. The levees which must confine this flow to the basin are now deficient because they have settled below original design grade due to consolidation of the underlying soils, and the design has been revised upward. This places the lives and welfare of 650,000 people and their property and improvements in 13 parishes in the immediate vicinity of the Atchafalaya Floodway in jeopardy each flood year. The tax assessment records indicate the value of potential flood losses to be approximately $8 billion, not including public improvements. Over the past half century, we have supported the Mississippi River and Tributaries Project and have agreed that construction of flood protection works should start upstream and progress downstream. As a result, the Mississippi River and Tributaries Project is now more than 90% complete in sites upstream from Louisiana while the levees in the Atchafalaya Basin can contain only 67% of the project flood. Work on this project has been underway since 1928 and isn't scheduled for completion until the year 2000. We request that Congress provide $37,600,000 for this project for Fiscal Year 1988.

CHANNEL IMPROVEMENTS

(Budget: $84,000,000) (Request: $84,000,000)

Channel improvements and stabilization provide protection of levees and the many improvements behind them, as well as preventing unsatisfactory alignment where the river's bank is unstable. This project is also a Main Stem component of the flood control improvement program for the Mississippi River and the benefits are the same as for the other main stem components. The Mississippi River and Tributaries Project above Louisiana is about 90 percent complete but to a much lesser extent within Louisiana. Because of the improvements upstream, increased flows are a major problem in Louisiana where the project is lagging. The funds we are requesting will provide for the dredging and revetment work necessary to accommodate these increased flows.

MISSISSIPPI DELTA REGION PROJECT, CAERNARVON STRUCTURE

(Budget: $4,500,000) (Request: $4,500,000)

The Caernarvon Freshwater Diversion project has been recommended for construction by the Corps of Engineers and the U.S. Fish and Wildlife Service. It has already been authorized by the Congress. Plans and specifications are being prepared and are virtually ready for construction. Funding is to be provided on a 2/3 federal/1/3 state matching basis. Cost estimates are in the range of $20 - $25 million. The structure is proposed to have a flow of 8,000 cu ft per sec. Freshwater from the Mississippi River will be introduced into an intermediate/brackish marsh to reduce salinities to approximate those years of high rainfall. A large area will benefit from the salinities to approximate those years of high rainfall. A large area will benefit from the salinity reduction including important oyster seed grounds east of the Mississippi River where the salinities will be maintained below 15 parts per thousand to retard the predator oyster drill. Habitat for many commercial species will also be improved.

It is requested that $4,500,00 for FY 1988 be provided to initiate construction on this very beneficial project.

MISSISSIPPI RIVER LEVEES
(Budget: $26,500,000) (Request: $26,500,000)

Construction of mainline Mississippi River Levees in Louisiana also lags behind construction in the upper valley. The same reasons that apply to our request for funds for channel improvements on the Mississippi River and improvements in the Atchafalaya Basin, apply equally well to our request for additional funds for Mississippi River Levees. We are requesting that $26,500,000 be appropriated for this important project.

EASTERN RAPIDES AND SOUTH CENTRAL AVOYELLES PARISHES
(Budget: $1,350,000) (Request: $1,350,000)

The time has long past when construction should have begun on this project. It was authorized in 1970, and its construction would reduce flooding on more than 206,000 acres. To minimize any further delays to this project, we in Louisiana are willing to defer progress on the Bushley Bayou, Louisiana project, and the Larto Lake - Saline Lake, Louisiana project, in exchange for utilization of the full capability of the U.S. Army, Corps of Engineers, on the Eastern Rapides and South Central Avoyelles, Louisiana project. We are, therefore, requesting that $1,350,000 be appropriated in Fiscal Year 1988 for this project.

LOCAL CONTRIBUTIONS FOR FLOOD CONTROL IMPROVEMENTS

Historically, Louisiana has always done its part in cooperation with the Federal agencies concerned with flood control. The Louisiana State Board of Engineers, the forerunner of the Office of Public Works, was created in 1879 the same year as the Mississippi River Commission to coordinate the planning and construction of the required flood control facilities to protect the State. Since that time, local expenditures for flood control have exceeded $730,000,000. This amount adjusted to 1979 dollars represents expenditures in excess of $5.3 Billion. Nearly one-half of the potential flooded area of the Lower Mississippi River Valley lies in Louisiana. Local expenditures for flood control have increased with the growth of the valley. This record not only meets, but exceeds any National Water Policy local participation requirements ever put into practice.

The State of Louisiana, its Office of Public Works, in particular, wishes to commend the Appropriations Sub-Committees on Energy and Water Development and express our appreciation for the foresight and understanding exhibited in the past of the need for authorizing adequate levels of appropriations for water resources projects which are vital to the national interest. We solicit your further consideration of the recommendations presented herein.

NAVIGATION, HURRICANE PROTECTION AND WATER RESOURCES PROJECTS IN LOUISIANA

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana for the coordinated planning and development of water resources, including flood control, navigation, drainage, water conservation and irrigation projects; therefore, this statement is presented on behalf of the State of Louisiana. We are pleased to present the endorsement and recommendations for Fiscal Year 1987 appropriations for Louisiana projects. The projects listed herein are not contained in other separate statements by the Office of Public Works on the Red River Basin or the Mississippi River and Tributaries.

In making the following recommendations regarding construction, surveys and some selected operation and maintenance items, the State of Louisiana, in general, supports the President's budget recommendations for Fiscal Year 1987. These recommendations are made, not because the projects are unworthy of higher funding levels but because we agree that a balanced budget and reductions in projected deficits are worthy objectives and are in the best interests of the nation at this time; however, we also feel that water resources projects are probably the most worthwhile and cost-effective projects in the federal budget, having to meet stringent economic justification criteria not required of other programs. We ask that this be taken into consideration in the final decision-making process to allocate the available funds.

PROJECT	BUDGET ALLOWANCE AND LOUISIANA REQUEST
Construction	
Grand Isle & Vicinity	$ 1,968,000
Lake Pontchartrain & Vicinity Hurricane Protection	17,000,000
Larose to Golden Meadow	3,800,000
Mississippi River, Baton Rouge to Gulf	23,000,000
Mississippi River, Gulf Outlet	500,000
Mississippi River Ship Channel Baton Rouge to Gulf, LA	8,300,000
New Orleans to Venice	3,500,000
Ouachita & Black Rivers	4,300,000
Pearl River Slidell, St. Tammany Parish, LA	210,000
Authorized Studies	
Amite River & Tributaries	$ 400,000
Bayou Lafourche & Lafourche Jump Waterway, LA	52,000
Gulf Intracoastal Waterway, LA & TX Section	425,000
Louisiana Coastal Land Loss and Marsh Creation	276,000
Louisiana Coastal Shore & Barrier Island Erosion	165,000
Louisiana Coastal Water Supply	-0-
Louisiana Coastal Area, Hurricane Protection	275,000
Mermentau-Vermilion & Calcasieu Rivers and Bayou Teche	510,000
Ouachita River Basin, AR & LA	340,000
Pearl River Basin	230,000
Upper Bayou Teche, LA	125,000

Operation and Maintenance	Estimated Allowance and Louisiana Request
Atchafalaya River, Bayou Chene, Boeuf & Black	5,140,000
Barataria Bay Waterway	761,000
Bayou Bodcau Reservoir	305,000
Bayou Pierre	38,000
Bayou Teche	370,000
Caddo Lake	66,000
Calcasieu River & Pass	8,180,000
Freshwater Bayou	2,175,000
Gulf Intracoastal Waterway	15,600,000
Houma Navigation Canal	1,671,000
Lake Providence Harbor	228,000
Madison Parish Port	109,000
Mermentau River	1,151,000

Operation and Maintenance	Estimated Allowance and Louisiana Request
Mississippi River, Baton Rouge to Gulf	35,820,000
Mississippi River - Gulf Outlet	7,840,000
Mississippi River Outlets, Venice	2,383,000
Ouachita & Black River	4,948,000
Pearl River	139,000
Red River Waterway - Mississippi River to Shreveport	3,729,000
Removal of Aquatic Growth Tangipahoa River	-0-
Wallace Lake	112,000

We wish to express our thanks to the Appropriations Sub-Committees on Energy and Water Development of the House and Senate for allowing us to present this brief on the needs of the state. Without reservation, practically every single project in Louisiana which has been made possible through actions of these committees has shown a return in benefits many times in excess of that contemplated by the authorizing legislation. The projects which you fund affect the economy of not only Louisiana but the nation as a whole. The Office of Public Works appreciates accomplishments of the past and solicits your consideration of the appropriations requested for Fiscal Year 1988.

BUDGETING PROBLEMS FOR FISCAL YEAR 1988

Senator JOHNSTON. Thank you, gentlemen. Thank you very much, Mr. Patterson, for an excellent statement. Really, we should thank all of you for your continued interest and support for these projects.

Let me say as a general proposition that you are not going to find any two Senators who are more aware of water resource needs of this region or the nation than Senator Stennis and I, who appreciate the fight all the more.

At the same time, we are going to be restrained by whatever the results of that fight turn out to be. The first fight will be in the Budget Committee, where, under the present reading of the Gramm-Rudman law, we have a deficit target of $108 billion, which means that we have to find some $62 billion in reduction—that is $62 billion in outlays, not appropriations.

Some budget accounts spend out very slowly; some would spend out at a rate of $2 of appropriation for every $1 you can reach in outlays.

We have to save, according to the present estimate, some $62 billion. The President has said thus far that there would be no tax increase. So if you have no taxes and you must reach the full $108 billion, according to the way we figure it, if you take it equally from defense and domestic spending, excluding those programs which are exempt under the Gramm-Rudman, you end up with a 27-percent cut below a freeze level in domestic spending. That is below a freeze, or a 29-percent cut below a freeze in defense.

I don't think that is going to happen, but I am just telling you the magnitude of what we are up against. In other words, if you have to make these goals, you have to absolutely savage everything in both domestic and defense spending. That is what present law calls for. To me, what we must do is make budget cuts in both domestic and defense, and we must also have some additional revenues.

In addition to that, you still have to adjust the target of $108 billion, because that would be too much of a cut. Of course, you could solve it all by false accounting, which is to use phoney figures and just pretend that the road is going to be faster than we know it is going to be; in other words, use budget figures and assumptions which are not correct.

I certainly would be opposed to adjusting the targets. But, if you are going to have a budget process and you are going to try to reduce the deficit, then really do it, don't just fail to reach the target and say you did. That is, frankly, what the administration has proposed in their budget. The President's budget has $27 billion worth of phoney figures in it, things that just don't exist, and many other proposals just won't happen—things like asset sales.

The point is that Senator Stennis and I and others are going to have a tough fight on your behalf. It is going to be tough to start some of these new programs which we support very strongly. It is going to be hard to initiate them while we are strained to keep those projects already underway going at an optimum rate.

Each of the projects that all of you described are excellent projects. We are familiar with most of them and we are going to do the dead level best we can with what we are given to do the job with.

I don't mean to paint this picture of a 27-percent cut below a freeze in domestic spending; I don't think that is going to happen. I think somewhere along the way somebody is going to say, that is ridiculous.

But that is the direction we are going in now. We hope we are going to find a way out of this thing that will make sense so that we can get a lower deficit than we have now. I would still be able to tend to some of the basic needs of government, which flood control is one of the very top needs.

Senator Stennis, do you have any questions or comments?

Chairman STENNIS. Mr. Chairman, I am in agreement with what you say here about the situation and your opinion also is sound, I think. We have a very difficult assignment this year, but it is not impossible, and I think we will do something about some of these projects.

Let me just review, too, those that don't happen to know already.

We have gone along now after all these years of high success and nationwide water projects. And we went for something like 14 or 15 years or somewhere near those figures without passing a major authorization bill giving the authority to undertake new projects and the Congress to make these appropriations.

Now, we finally got it through what was holding it up, which was a question of what percent of contribution would the local interests have to put up and that was difficult to settle. But finally, such a bill did pass but only after some projects had been left out, projects that were well within what had been the rule, the test, and well within the measure of value and necessity of taking care of the flood situation.

Now this is the first year, I think, where we will have a chance to act on these newly authorized projects. We can't do everything in 1 year, but I really like the way you expressed yourself and your commitment to try on cost sharing. I will certainly be on that same ticket.

Now, we have just got to get some relief for some of these projects, and I believe that we can once they are better understood.

We survived a lot of shocks like this and others on this committee. But we must find a way to get the appropriation bill back into a normal, regular process. We may wear you out, though, timewise. We want to get it done as soon as we can. That will be our effort and goal. I have been around, and I don't know of any program of expenditures that anywhere near equals, much less surpass, in importance what has been spent since I have been on the committee, as an investment in the future—an investment in future generations by providing the infrastructure to create jobs through water resource development and other things that will contribute in that category.

I feel like that is pretty strong evidence after you watch it there for, oh, 25 years, and find the thing going that way. You just believe that that must be where the merit is. So we are going to continue our efforts in this area.

In the meantime, we need your continued support. I don't know of any group that comes here that does more to follow the situation they are confronted with in their own communities and home counties than do organizations like yours that relate to water resources.

So I am with them, and naturally, that being true I want you to be with us. I think that will make it up.

Thank you very much.

Senator JOHNSTON. Thank you, Mr. Chairman.

Thank you, gentlemen, for an excellent presentation.

Mr. MOONEY. Thank you.

ADDITIONAL PREPARED STATEMENTS

Senator JOHNSTON. And again, as I mentioned earlier, all of your statements supporting these projects will be made part of the hearing record.

[The statement follows:]

STATEMENT OF THE PONTCHARTRAIN LEVEE DISTRICT

THE LEVEE DISTRICT

The Pontchartrain Levee District extends downstream from the city of Baton Rouge a distance of 115 river miles, includes the east (left descending) bank of the Mississippi River, and is comprised of portions of East Baton Rouge, Iberville, Ascension, St. James, St. John, and St. Charles Parishes. The east bank levee is continuous throughout the Levee District, including the Bonnet Carre Floodway.

Extensive development of major industries has taken place in the Pontchartrain Levee District. Along with industrial growth, our Levee District has witnessed a dramatic companion increase in residential and urban expansions. Substantial portions of prime agricultural lands have now been converted to other uses. Two nationally ranked deep-water ports are located in the Pontchartrain Levee District, the Baton Rouge Port and South Louisiana Port.

The District contains large diameter pipeline systems which deliver goods to nationwide distribution points. Interstate Highway 10 and 55 and a number of major U.S. Highways traverse the Levee District, along with major railroads. The Mississippi River deep water channel for ocean going vessels and the 55-foot channel are a part of the Levee District Area.

All these features and many other improvements are protected by the Mississippi River & Tributaries Flood Control Project. Only through continuous, effective flood control improvements and maintenance can this area and the lower river valley meet requirements to serve national needs for industry, employment, deep-water navigation, highway and rail transportation, major pipe lines, residential, agriculture and related activities.

RECOMMENDATIONS

Mississippi River Levees (Amount Recommended: $28,300,000)

Construction of the Mississippi River levee in the Pontchartrain Levee District must be timely completed. Unemployment has now reached levels higher than twenty-two percent in our area and recovery is completely dependent on a quality flood control system where integrity is unquestioned. Not only are jobs and the economy at stake, but also agriculture, industry, transportation, homes, businesses, environment, numerous improvements, and other major elements.

The St. Gabriel Levee, in Iberville Parish, is desperately in need of enlargement and slope pavement construction. During the 1973 flood, a narrow crown, potato ridge addition was hastily built on top of the old existing levee to prevent overtopping. No other improvements have been made since 1973. Plans and specifications have been completed for this work some time ago. Please do not allow further delays. It is recommended that $1,800,000 more than the budget amount be appropriated, for a total of $28,300,000, and that construction of the St. Gabriel Levee be expedited.

Other reaches of levee remain in critical need for improvement. Substantial erosion resulted to the levee in St. James Parish downstream from the Sunshine Bridge and has not yet been repaired and enlarged. This is the next priority after St. Gabriel Levee. It is recommended that the Sub-Committee plan to provide approximately $2,000,000 for this work in F.Y. 1989.

Channel Improvement (Amount Recommended: $84,000,000)

Main line levees must be protected from caving banks throughout the lower river reaches where extremely narrow battures are the last line of defense against crevasses and failures. There simply is no place left for levee setbacks in the Pontchartrain Levee District. The only proven remedy to stabilize these continually eroding banks is construction of revetment.

Funding levels of the past few years for Mississippi River Channel Improvement should not be allowed to decline, and this level of spending represents a cutback. Revetment work in Louisiana below Old River is only about sixty percent complete. Postponement of critical locations will result in higher costs and could cause levee setbacks. The Pontchartrain Levee District, Board of Commissioners, urges Congress to appropriate at least $84,000,000 for fiscal year 1988, which is the budgeted amount.

Lake Pontchartrain Hurricane Protection

A seldom remembered feature of Hurricane Protection in the Pontchartrain Levee District area is that portion which extends above the New Orleans City area and around Lake Pontchartrain. That segment designated for St. Charles Parish is in the Pontchartrain Levee District. In the years 1968 to 1970 this Levee District purchased necessary rights-of-way for construction of the Hurricane Protection Levee along the Pontchartrain Lakefront shoreline as designated by the Corps of Engineers. Subsequently, a number of reviews, re-studies and changes have been made for the Project, and no construction has yet been undertaken in the Pontchartrain Levee District.

As hurricane protection is advanced in the New Orleans area, and not further around Lake Pontchartrain, then the end result is that higher hurricane stages will be forced into unprotected, adjacent areas, namely St. John Parish, resulting in higher flooding for longer periods of time. One area should not be protected at the expense of another. The entire project should be advanced in a manner to provide comparative benefits to the total area affected.

The Board of Commissioners, Pontchartrain Levee District, recommends that Congress provide adequate funding for the Lake Pontchartrain Hurricane Protection Project on a coordinated basis.

CONCLUSION

The Board of Commissioners, Pontchartrain Levee District, compliments the Subcommittees on Energy and Water Development for the keen understanding of the real needs of the MR&T Flood Control Project and the efficient and alert actions taken to appropriate funds for its many complex requirements. We endorse recommendations presented by the Association of Levee Boards of Louisiana, Louisiana Department of Transportation & Development, Lower Mississippi Valley Flood Control Association, Red River Valley Association and Ouachita River Valley Association.

STATEMENT OF THE L'ANGUILLE IMPROVEMENT DISTRICT

The L'Anguille River Arkansas Project, which is included under the Appropriation Title of "Flood Control, Mississippi River and Tributaries," is located in Northeast Arkansas within the Counties of Poinsett, Cross, Woodruff, St. Francis, and Lee, and was authorized by the Flood Control Act of 30 June 1948. On 21 February 1986 the Mississippi River Commission issued its Record of Decision in approving the Re-evaluation Report of the Memphis District Office Corps of Engineers dated August 1985. The Re-evaluation Report completed the planning process for the L'Anguille River Project, and since 21 February 1986 the detailed engineering studies necessary for project construction have been completed.

To date Congress has appropriated $2,611,000 for the L'Anguille River Project. It is essential that it receive construction funding for Fiscal Year 1988, and what is equally important is that it be considered a part of the MR&T overall project and not as a separable element thereof.

Funds were appropriated by Congress for the re-evaluation of this Project because of the unique flooding problem which occurs in this River Basin during the late summer and early fall. These floods completely ruin mature crops ready for harvest. This is highly unusual and was alarming when brought to the attention of the Appropriation Subcommittees and Senators Bumpers and Pryor and Congressman Alexander, hence the appropriation of monies for this re-evaluation. Coupled with this problem of late flooding is the fact that the landowners in this River Basin have suffered from the general economic conditions existing in the agricultural economy, and they cannot meet any "ability to pay" criteria in shouldering the non-federal costs of this Project. For this reason the sponsors feel that this Project should have been included as an exception under Section 103(a)(2) of the Water Resources Development Act of 1986.

The expenditure of taxpayers' funds in getting the Project to this stage would be a tremendous waste if construction funding were not appropriated in Fiscal Year 1988 and subsequent years to complete the construction of this Project as quickly as possible. It should be pointed out that the L'Anguille River Project was one of the first, if not the first Project, to have equal input from the U. S. Fish & Wildlife Service and the Environmental Protection Agency. Both of these Agencies along with the Corps of Engineers have approved the plan of construction for this Project. It is crucial that Congress recognize the complete cooperation that existed in the re-evaluation of this Project by all Federal Agencies which occurred over an extremely short period of time, but because of the automatic cut-off date of May 1, 1986, funds for construction cannot be appropriated under the old cost sharing provisions in effect for other MR&T Projects. Therefore, it is imperative that this Project be construed as not being a separable element for purposes of cost sharing provisions.

Solutions to these problems would be for Congress:

(a) To fund this Project under the old cost sharing provisions of the original Flood Control Act of 30 June 1948; and/or

(b) To amend the Water Resources Development Act of 1986 by including the L'Anguille Project under the exceptions of that Act; and/or

(c) To mandate the Secretary of the Army to establish procedures in determining the ability to pay non-federal costs by a Project's sponsors; and/or

(d) To enact legislation or amend existing legislation to define Projects such as the L'Anguille as being a distinct portion of the MR&T Project since the L'Anguille River is not physically separable by any stretch of the imagination.

STATEMENT OF THE DELTA COUNCIL

Thank you for the opportunity to appear before you.

My name is Chip Morgan, and I serve as Executive Vice President of Delta Council, a non-profit, privately-supported organization of farmers and businessmen in Northwest Mississippi. Our area encompasses an 18-county area, commonly known as the Yazoo-Mississippi Delta.

At Vicksburg, Mississippi, which is the southernmost point of the region which we serve, approximately 41 per cent of the United States, including 31 states and three Provinces of Canada, drains through our region. During periods of heavy rainfall across the Ohio, Missouri, and Lower Mississippi Valley, our local interests are charged with the responsibility of placing a bridle on the watershed of a land area that covers almost one-half of the total land area of the United States.

Since the great floods of the Lower Mississippi Valley occurred in 1927, the local people of our region have supported local flood control efforts in an amount to exceed $1 billion. These local dollars that were assessed from local property owners in order to cooperate with federal efforts in flood control and drainage have brought immeasurable benefits to the economy of the area. Although many regions of this country do not realize the vast number of capital improvements that have been made in this country due to flood control and drainage projects during the past 50 years, the constant threat and frequent occurrence of flooding in our region of the country serves a constant reminder that flood control and water resource development in this country must continue to be a national priority in order for us to benefit from the real wealth of our nation's natural resources.

Although there are a number of very important flood control projects that warrant mention in our testimony, the two existing Levee Boards that serve our region will record testimony on those projects which are vital to the area. Since we are located in an area of the country that has long been recognized for its susceptibility to flooding caused by the watershed of other states and even entire regions of the country, Delta Council would like to emphasize the importance of one project that is absolutely critical to our area. The Yazoo Backwater Project, including backwater levee alignments and a backwater pump, was authorized in 1941, and with the completion of the backwater levees during the early 1980's, and the beginning of construction of the Yazoo Backwater Pumps in March of 1986, we are witnessing enormous progress in an effort to reduce the potential threat of flooding in this region of the country. As many members know, the people of our region of the country have suffered enormous losses during five of the past 13 years due to flood damages that will not occur when this project is completed. Actually, more than $150 million in damages have been recorded during this period, not to mention the disruptive impact of these floods on the wildlife habitat of this southern bottomland hardwood area and the human suffering and the inability of the region to attract additional industrial and business investments in the area due to the threat of floods cannot be measured, either.

This Subcommittee has continued to support funding for the Yazoo Backwater Pump Project, and as I appear before you today, construction continues so that these problems associated with backwater flooding can be alleviated. We urge your continued support and earnestly request that you give this project your careful consideration during the appropriations process.

We genuinely appreciate the opportunity to appear before you today, and we will be happy to respond to any questions that you may have today or at a later time in writing.

STATEMENT OF THE LITTLE RIVER DRAINAGE DISTRICT

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

MY NAME IS LARRY D. DOWDY. I LIVE IN CAPE GIRARDEAU, MISSOURI AND SERVE AS MAINTENANCE SUPERVISOR FOR THE LITTLE RIVER DRAINAGE DISTRICT OF SOUTHEAST MISSOURI. MY TESTIMONY WILL RELATE SPECIFICALLY TO F. Y. 1988 APPROPRIATIONS FOR THE ST. FRANCIS BASIN PROJECT OF THE MISSISSIPPI RIVER AND TRIBUTARIES PROJECT.

I AM TESTIFYING TODAY ON BEHALF OF LEVEE AND DRAINAGE DISTRICTS WITHIN THE ST. FRANCIS BASIN PROJECT IN SOUTHEAST MISSOURI AND NORTHEAST ARKANSAS. ALL OF THE DRAINAGE AND LEVEE DISTRICTS REPRESENTED ARE LOCALLY TAX FUNDED AND OPERATED AND MOST ARE DEPENDENT UPON OTHERS FOR THEIR OUTLETS INTO THE ST. FRANCIS AND MISSISSIPPI RIVERS.

THE F. Y. 1988 BUDGET INCLUDES $9,500,000 FOR CONSTRUCTION IN THE ST. FRANCIS BASIN PROJECT WHICH HAS A CORPS CAPABILITY OF $11,075,000. ALSO $572,000 IS IN THE F. Y. 1988 BUDGET FOR ENGINEERING AND DESIGN ON THE ST. JOHNS BAYOU AND NEW MADRID FLOODWAY WHICH IS EQUAL TO THE CORPS CAPABILITY . THESE AMOUNTS ARE SUPPORTED BY OUR DISTRICT AND ASSOCIATION AND DO REFLECT A SLIGHT DECREASE OF THE FUNDS APPROPRIATED IN F. Y. 1987. WE BELIEVE THESE AMOUNTS, EVEN THOUGH LESS THAN LAST YEAR, WILL PERMIT A REASONABLE CONTINUATION OF THE AUTHORIZED WORKS WITHIN THIS BASIN.

THE COMPLETED WORKS CONTINUE TO PRODUCE A FAVORABLE COST-BENEFIT RATIO OF MORE THAN 3:1 WHICH FURTHER TESTIFIES TO THE WISE INVESTMENT BEING MADE OF OUR TAX DOLLARS.

WE GREATLY APPRECIATE BEING GIVEN THIS OPPORTUNITY TO APPEAR BEFORE THIS COMMITTEE AND TO MAKE YOU AWARE OF THE NEEDS OF OUR AREA. WE ARE CONFIDENT THAT OUR REQUESTS WILL RECEIVE THE SAME POSITIVE CONSIDERATIONS AFFORDED US IN THE PAST. WE HAVE A NUMBER OF INDIVIDUALS PRESENT WITH US TODAY WHO HAVE TRAVELED GREAT DISTANCES AND WHO HAVE TAKEN TIME AWAY FROM THEIR BUSY SCHEDULES TO SHOW THEIR CONTINUED SUPPORT FOR THE ST. FRANCIS BASIN PROJECT. WE ALSO SUPPORT THE OTHER REQUESTS MADE BY THE OTHER WITNESSES OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION.

STATEMENT OF ROBERT S. WEIR, EXECUTIVE DIRECTOR, TOMBIGBEE RIVER VALLEY WATER MANAGEMENT DISTRICT

SUMMARY

TENNESSEE-TOMBIGBEE WATERWAY PROJECT - PL 525, 79TH CONGRESS
MISSISSIPPI AND ALABAMA

RECOMMENDING CONTINUED FUNDING THAT WILL ALLOW CONTINUED OPERATION AND MAINTENANCE OF THIS PROJECT TO THE FULL CAPABILITY OF THE CORPS OF ENGINEERS.

TOMBIGBEE RIVER AND TRIBUTARIES

FLOOD CONTROL PROJECT - PL 85-500, 85TH CONGRESS
MISSISSIPPI AND ALABAMA

RECOMMENDING CONTINUED SUPPORT OF FLOOD CONTROL PROJECTS ON THE TOMBIGBEE RIVER AND TRIBUTARIES IN THE STATE OF MISSISSIPPI TO THE EXTENT OF THE CORPS OF ENGINEERS' FULL CAPABILITY.

TOMBIGBEE RIVER BASIN, MISSISSIPPI AND ALABAMA, AND TUSCUMBIA RIVER BASIN, MISSISSIPPI

FLOOD PREVENTION AND CONTROL, SOIL EROSION AND SILTATION CONTROL, WATER QUALITY CONTROL, WATER SUPPLY, RECREATION, FISH AND WILDLIFE, ENVIRONMENTAL QUALITY, WATERSHED PROTECTION AND ALLIED PURPOSES - RESOLUTION BY THE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION OF THE HOUSE OF REPRESENTATIVES, UNITED STATES OF AMERICA, ADOPTED SEPTEMBER 19, 1984

RECOMMENDING FUNDING TO THE FULL CAPABILITIES OF THE U. S. ARMY CORPS OF ENGINEERS AND U. S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE.

The Tombigbee River Valley Water Management District was created for the purpose of developing and conserving the human and natural resources of our region of Mississippi. We represent twelve member counties located in Northeast Mississippi consisting of approximately 350,000 people; however, our projects may benefit a larger area and a considerable larger population.

Our agency has proudly served as the official sponsor to the U.S. Corps of Engineers in the construction of the Tennessee-Tombigbee Waterway. We consider this Waterway a masterpiece of technology that was performed by the Corps. We continue to salute the Corps for a job well done.

Tombigbee River Valley Water Management District has also proudly served in the sponsorship of a great number of flood control projects and other water related projects that have resulted in considerable benefit to our area of the country.

Our goals are to continue addressing and resolving the needs of the people of our area. These benefits can become reality by assisting our farmers, landowners, and timber farmers in controlling damages to their lands through some type of water management program.

Many of our residences and businesses are experiencing such burdens of risk from uncontrolled flood waters, land erosions, soil deterioration, not mentioning, property damage.

We must allow our people to operate under free enterprise and support them through extending some relief by reducing their burden of risk that may confront them.

One crucial needed project is the Luxapalila, a tributary of the Tombigbee River. Luxapalila originates in Alabama and flows through the metropolitan area of Columbus, Mississippi before emptying into the Tombigbee River. During flood season, many homes and businesses experience flooding which result in considerable damage to property. The risk of flooding creates additional expenses for all involved such as a loss of business, high premium for insurance coverage, loss of productivity and reduction of value to land.

The Corps and our agency have invested time, effort, and expense in studying this problem. All studies have revealed that this project is very feasible.

I hereby request that adequate appropriation be made for the implementation of the Luxapalila Project.

We remain very optimistic about our economic and industrial development of the Tennessee-Tombigbee Waterway. Many existing Mississippi firms are becoming aware of the water borne freight rates and with this information are exploring the potential markets and opportunities in export in Mid-America.

Northeast Mississippi's greatest export potential is in the agricultural production area. One of the leading commodities is forest products such as chips, logs, timber and finished wood products; grain products, soybeans, and wheat.

We believe that if we can overcome problems of marketing of commodities, developing value added industry and generation of capital, Mississippi can receive benefits from the Tennessee-Tombigbee Waterway that can have great growth potentials. Although there are areas of concern, they are not impossible to acquire and develop. It is this area of concern that will allow local free enterprise to exercise its leadership. The Tennessee-Tombigbee Waterway will provide a laboratory of opportunities and experiences for the private investor.

A comprehensive water resource plan must be implemented to give relief to flood and drainage problems and soil erosion to agriculture and timber lands in the area. These problems must be addressed through snagging and channelization of tributaries and watershed projects developed to curb problems created by rivers and creeks in the area that deprive our farmers of a considerable amount of farm land that could be utilized and benefit people throughout our nation and world.

As we prepare for the future, we feel that such a comprehensive water management plan will not only be a relief to our farmers and landowners, but we can also utilize the surface water as a solution for our water source for our residents and industry. The results of several studies addressing the supply of our ground water indicate a crucial concern for potential industries in their consideration of locating or expanding in this area along with a similar concern by our residents of what the future may hold regarding this necessary commodity.

Our considerable amount of rainfall in this area can be converted into an asset through a retention program. Our ground water aquifers are decreasing at an alarming rate due to population and industrial growth. It is important that we continue to devote our efforts toward the conservation of our lands and natural resources.

We further feel that these necessary projects can only be accomplished with the continuing assistance of the U.S. Army Corps of Engineers and the U.S. Soil Conservation Service through the U.S. Department of Agriculture along with numerous state and federal agencies. We recommend that funding for the full capabilities of these agencies be approved in order that we may continue to address these needs. Such request is made in reference to the following authority: The Committee on Public Works and Transportation of the House of Representatives, United States, adopted a resolution on September 19, 1984 that authorized and directed the Secretary of Agriculture and the U. S. Army Corps of Engineers to make joint investigations and surveys of the Tombigbee River Basin, Mississippi and Alabama, and Tuscumbia River Basin, Mississippi. A report that will be prepared and submitted to the Committee in compliance with the provisions of Public Law 639, Eighty-Seventh Congress, will contain the investigation and survey results which are in the best interest of flood prevention and control, soil erosion and siltation control, water quality control, water supply, recreation, fish and wildlife, environmental quality, watershed protection and allied purposes.

It is also to be noted that the cost sharing required by Congress may jeopardize this area in fulfilling many of the most needed water resource projects. Congress' consideration of the cost sharing requirement is hereby requested.

As sponsor for many water resource projects through the years, Tombigbee River Valley Water Management District has financially participated and is willing to continue within its limitations. However, we do feel that some projects may be prohibited due to our inability to cost share the amount now required.

Tombigbee River Valley Water Management District remains dedicated in the promotion of the Tennessee-Tombigbee Waterway to its greatest potential. Your support along with your foresight has played a vital role toward not only the future of our area, but for Mid-America and for this we are grateful.

RED RIVER WATERWAY PROJECT, LOUISIANA

STATEMENT OF DON DUGGAN, CHAIRMAN OF THE BOARD, RED RIVER VALLEY ASSOCIATION

Senator JOHNSTON. The next group of witnesses represent the Red River Valley Association. We are pleased to welcome my very, very good friends here.

Ladies and gentlemen, let's have order in the room. We have a very outstanding panel here, and I want you to hear every word they have to say. I don't expect to agree with one bit of what they have to say. [Laughter.]

The chairman of the Red River Valley Association is a very outstanding man. If I had to handpick a man to head up the Red River Valley Association and had a little something to do with it, but if I had everything to do with it, I would pick Don Duggan. So I want to recognize Don Duggan who, in turn, will recognize this outstanding man.

Mr. DUGGAN. Thank you, Mr. Chairman.

Senator Johnston, Senator Stennis, we thank you for this opportunity that you provided us by letting us appear on behalf of the Red River Valley Association today. I am Don Duggan, chairman of the board of this association. We are 26 years old at this time and, as you know, we are not strangers to you. We have appeared before you for many years.

Senator Johnston, we are extremely grateful to you for your untiring efforts in keeping our project alive thus far. We are particularly pleased that you have asked the Corps of Engineers for a specific funding schedule and we ask that you continue to keep the pressure on the Corps.

Now, the Corps of Engineers' members are some of our closest friends, but sometimes they have a tendency to drag their feet. We are delighted that you put the pressure on them. We can't do that.

Our four-state area continues to be plagued with the worst depression since the thirties, with Louisiana leading all the states with a recent unemployment rate of nearly 15 percent.

I know that all our sister states—Texas, Oklahoma, and Arkansas—are plagued with the same problems that we have, and it just seems that it is all triggered from the collapse of the oil industry.

We were booming when other parts of the nation were experiencing recession, but it was nothing to compare with what we are going through. But it was a severe one.

During these times, a few years ago, a so-called windfall profits tax was levied against the oil industry. Some $70 billion was extracted from the oil industry, $42 billion of those dollars coming from the four states involved in the Red River Waterway project. A return of 2 percent of this amount would complete our project, and it would relieve some very depressed areas.

We ask that you please accelerate the funds and let us proceed with this project. This morning, in USA Today, some very grim statistics were reported regarding the oil industry.

John Herrington remarked after visiting last week in Oklahoma, Texas, and Louisiana that if this trend continues, there won't be an industry left. This Red River Waterway project, its completion, in my judgment, would best supplement what we are losing from our oil resources. I guess you figured out by now that I am in the oil and gas business, as well as a supporter of the Red River Waterway project, and as you know, I am not a novice in either one of them. So in our judgment, we have paid our dues, and we just ask you now to please help us.

[The statement follows:]

STATEMENT OF DON DUGGAN, CHAIRMAN OF THE BOARD, RED RIVER VALLEY ASSOCIATION

I am Don Duggan, Chairman of the Board of the Red River Valley Association. Our association is 62 years old and represents citizens from all walks of life in the four state area comprising Arkansas, Louisiana, Oklahoma and Texas who are vitally concerned with the continued development of the water and land resources of the Red River Basin.

During our presentation colleagues from each of the four states will address you to testify on specific needs within their own state, and I will open with a few general remarks.

We continue to lose thousand of acres of some of the finest farm land in the nation by the Red River's uncontrolled flow, causing massive bank caving along its entire length. These cave-ins not only result in the loss of valuable agricultural land, but constantly pose threats to levees, bridges, highways, railroads, utilities and pipe lines. To end this destruction, it is urgent that Congress provide funds necessary for emergency bank protection measures.

Clean water, for residential, agricultural and industrial use, continues to be a major concern of our association. We continue to permit hundreds of tons of salt and other minerals to be dumped into it everyday, polluting and making its water too saline for widespread use. Many communities and cities along the Red are short of potable water sources and are resorting to costly plans to insure their future water needs. In upstream areas of Texas and Oklahoma, the situation is even more critical to the future well-being of communities and farms. Removal of the salt by implementing the Chloride Control Projects authorized by congressional passage of the 1966 and 1970 Flood Control Acts would enable the Red to serve as a practical water source for these communities.

Next, I want to comment on the Red River Navigation Project. With five locks and dams authorized for construction to carry the Waterway from the Mississippi to Shreveport-Bossier, the first has been completed and is operational; the second is reaching completion this summer. As you well know, progress on the Waterway beyond this point has met resistance by the Administration and, had it not been for the support and actions of this Committee, the work could have been brought to a standstill. We want to express our respect and appreciation to you for the supporting action you undertook to prevent this project from being halted at the halfway point. Work on Lock and Dam No. 3 is underway, as well as upstream projects, thanks to your direct resolve toward completion of this project so meaningful to our regional planing. In this regard, we ask your support in urging the development of a schedule for funding construction-through-completion of the Waterway so that finite port development and commercial planning can prepare for earliest use and beneficial return of the system.

The four states Arkansas, Oklahoma, Louisiana, and Texas are all heavily dependent upon agriculture, oil and timber. All of these industries are in a depressed state with Louisiana leading the nation in unemployment. Rapid construction and completion of this project will be a much needed shot in the arm for citizens in the Red River Basin in terms of jobs now and in vital development of a broader economic base.

Our association recognizes the constraints on our Federal budget. We understand the necessity of moderation in funding projects wherever practical. But, little benefit can be derived until the five locks and dams are completed. I therefore urge you to consider the investment and progress that has already been made in this project, the need and potential it represents, and to take the action necessary to insure earliest completion of the Red River Waterway.

Thank you for allowing me to make these comments in behalf of the Red River Valley Association and our four state region. Again, we appreciate the courtesy, understanding and support we have received from the members of this Committee.

Senator JOHNSTON. Our leadoff witness today is no stranger to any of you, former Congressman Joe D. Wagner. He is vice chairman of the Louisiana Red River Valley Association from Louisiana.

Joe, tell them about it.

Senator JOHNSTON. Thank you.

STATEMENT OF JOE D. WAGGONNER, FORMER U.S. REPRESENTATIVE FROM LOUISIANA, AND VICE CHAIRMAN REPRESENTING LOUISIANA

Mr. WAGGONNER. I don't want to sound a little bit smart or some such thing, but cousin Bennett, I am glad to be here with you.

Senator JOHNSTON. That sounds good to me; it sounds just right.

Mr. WAGGONNER. Senator Stennis, Senator Johnston, and I really are related. We are distant cousins, so we understand each other. But we have something akin with you, too. I came here to tell you that things are, today, at least, worse back home than you think.

It is snowing. It was snowing when I left this morning to go to the airport in Paris, and I got to Cado Parrish, and it was snowing. They grounded us in Memphis and they kept us there for 3 hours while they de-iced the airplane.

So this is a good time to be here, especially when we are talking about something that we all feel so close to. I came here today to leave an impression upon you of how much we appreciate what you in the Congress, both sides of the Hill, Senate side and the House side, have done for us under times which have been tough. Dollars haven't been plentiful, but it does appear to me that you in the Congress read the people better than some in the executive branch of the government. You understand what water resources mean, and you are not going to lose sight of what the future of water resources mean to this country, and I want to thank you for doing contrary to some who do otherwise than what really is good for this country.

We know you have limitations. My only plea is to go ahead and do what you can, because I know you are going to build this project. There is one pitfall, and that pitfall is never, ever—and I say this by virtue of my experience here on the Hill—never, ever give any President of the United States the power to line item veto of that which you provide for.

Never, ever leave some single bureaucrat in the innards of the bureaucracy to make those decisions about what is good and what is bad. You know the people better than they do. You work day and night to do what has to be done and express the wish of Congress and then sacrifice it and let it go to somebody in the executive branch of the government to set aside a veto, to nullify that which you have determined is good for this country.

It is easy; a former Member of Congress who was already touring in the military not long ago was advocating line item veto, and I said, "You have got to be crazy. You would never, ever do this."

He had the defense orientation, and I said, "You can't be comfortable with that." He said, "Yes, I'm comfortable with Reagan."

I said, "Who's the next man going to be? Is he going to attack defense that you find so near and dear to your heart?"

The forefathers had foresight and wisdom, and they trusted the Congress, and we trust you, and we thank you for your extrasensory perception to know what our water needs are.

Surely, we are never, ever going to repeat the mistake we made in the way of energy policy and apply that stupidity to water policy.

Thank you, Mr. Chairman.

Senator JOHNSTON. Thank you very much.

Mr. DUGGAN. Thank you, Joe.

STATEMENT OF WILLIAM C. (BILL) CHAPMAN, VICE PRESIDENT FROM OKLAHOMA

Our next witness will be Mr. William C. (Bill) Chapman. He is a vice president of the Red River Valley Association representing the state of Oklahoma.

Mr. CHAPMAN. Senators, I thank you very much for this opportunity to come this morning. We, of course, have put in our written testimony, but there are two rather unique factors or facets of that that I would like to particularly call to your attention and those from Oklahoma, particularly, are very concerned about these two, and I would like to direct your attention to them.

PARKER LAKE, OKLA.

One of these, or the first of these, is Parker Lake, located in Oklahoma. The Corps of Engineers completed the interim survey of this report on this project in 1975. It was approved by the Secretary of the Army as a multipurpose project. However, in December 1985, the OMB sent a letter to the Secretary stating that there was no federal interest in constructing Parker Lake, because the flood control benefits consisted of only 8 percent of the total benefits.

I might also state that Parker Lake was authorized, establishing a federal interest that we believe establishes a federal interest by Congress in title VI of the Water Resources Development Act of 1986.

We believe the Oklahoma delegation believe and contends that the Office of the Secretary of Army had recommended this project for construction as a multipurpose project. We further contend that there exists no Congressional authorized criteria or guidelines which would allow OMB to declare the project with only 8-percent flood benefits a single purpose project, and therefore, no federal interest.

Third, we contend that Congress declared a federal interest in Parker Lake by authorizing it for construction in the Water Resources Development Act of 1986.

And fourth, that OMB has no authority to direct that the Secretary not fulfill the congressional authorization, its responsibilities as established by the acts of Congress, and, therefore, we would like to request that funds be provided authorizing the amount of $70 million in 1988 to initiate construction of this project.

RED RIVER CHLORIDE CONTROL PROJECTS

The second thing I would like to call to your attention concerns the unique status of the Red River chloride control project. This is a project that concerns dumping of salt, as you know, Senator Johnston, in the Red River.

In February 1977, there were some 10 areas in that project. Construction on Area 8 was begun in February 1977 and is nearing completion. It is my understanding it will be completed in April of this year. In the Water Resources Development Act of 1986, section 1107, I believe, state that the rest of the projects in this chloride project would be commenced but provided that there would be a favorable finding of the effectiveness of the operation of Area 8 by a panel set forth in that act.

This panel is sort of brought together, it is my understanding, by the Secretary of the Army. It consists of various people who are set forth in that act, but that contains two persons that are to be appointed by the Secretary with concurrence of the Governors of Oklahoma and Texas.

There was a 3-year period that this has to be done within, and it is our understanding that the Secretary of the Army is to take the lead in setting up this panel. But it is also our understanding that as of this time, he has not taken any action in setting up this panel, and consequently, we would recommend strongly that the Secretary initiate the implementation of this evaluation program; and further, that you appoint Glen Sullivan, who is the secretary of natural resources for the state of Oklahoma, and who has been recommended by the Governor of Oklahoma, to be nominated to this panel.

We appreciate your time and consideration of these matters. Thank you.

[The statement follows:]

STATEMENT OF BILL CHAPMAN, OKLAHOMA VICE PRESIDENT, RED RIVER VALLEY ASSOCIATION

My name is Bill Chapman, and I serve as the Oklahoma Vice President of the Red River Valley Association. I was raised and still make my home in the Red River Valley. I am an attorney and a rancher. I and other members of my family have several agricultural holdings along the Red River in Oklahoma as well as Texas. As a result of these interests and being a lifelong resident of the Red River Valley, I am deeply interested and concerned about the proper development and utilization of this valuable national resource.

We in Oklahoma are concerned with several projects in the Red River Valley. This is appropriate since almost half of the State of Oklahoma is in the drainage basin of the Red River. The remainder of my presentation will address these projects and our request regarding each.

There is one lake in the construction phase in Oklahoma which we are vitally interested in. McGee Creek Lake is the only project under construction in the Oklahoma portion of the Red River Valley. This lake is being constructed by the Bureau of Reclamation as a multipurpose project. The dam is nearing completion with the entire project scheduled for completion in FY '88. In order to keep this project on schedule and to fully realize the previous investment, we are asking that $8,500,000 be provided to complete this project in FY '88, including all roads associated with the project.

Another on-going effort important to the Oklahoma Delegation is the continuation of the Red River Basin Comprehensive Study. Feasibility studies for the Oklahoma portion are underway at full Federal expense, as directed by Congress, with completion scheduled for September 1988. We appreciate the support which this project has received from your Subcommittee since its authorization. It is vitally important to our area. We request that Congress provide the funds to complete this study at full Federal funding in the amount of $660,000 in FY '88.

I would like to address two projects which have somewhat of an unique status. The first of these is Parker Lake. The Corps of Engineers completed an interim survey report on Parker Lake in 1975. This report recommended Parker Lake as a multipurpose project which would provide protection against flooding, a dependable water supply for M&I purposes, recreational lands for future use, and fish and wildlife mitigation. The total project cost is $48,100,000 with benefit/cost ratio of 1.2:1. The project was recommended for construction as proposed by the Chief of Engineers in his 30 May 1980 report. It was transmitted to OMB on the 25th of April, 1985 by the Assistant Secretary of Army for Civil Works with a recommendation to construct. Parker Lake was authorized for construction by PL 99-88, 15 August 1985, contingent upon the execution of a local cost sharing agreement acceptable to the Assistant Secretary of Army. Both the Oklahoma Water Resources Board and the RedArk Development Authority indicated a willingness to agree to be the non-Federal sponsors. OWRB provided a draft letter of assurance on the 4th of September, 1985, in which it agreed to non-Federal cost sharing as allowed under the provisions of Senate Bill 1567. However, on the 12th of December, 1985, OMB sent a letter to OSA stating that there was NO FEDERAL INTEREST in constructing Parker Lake because its flood control benefits were only eight percent of the total benefits. In additional to its authorization by PL 99-88, Parker Lake was authorized, reaffirming a Federal interest by Congress; in Title VI of the Water Resources Development Act of 1986.

The Oklahoma Delegation of the Red River Valley Association contends that (1) the OSA recommended the project for construction as a multipurpose project, (2) there exists no Congressionally authorized criteria or guidelines which allow OMB to declare a project with only eight percent flood benefits a single purpose project and, therefore, there to be no Federal interest in its construction, (3) that Congress declared a Federal interest in Parker Lake by authorizing it for construction in Title VI of the Water Resources Development Act of 1986, and (4) that OMB has no authority to direct OSA to not fulfill its responsibilities as established by acts of Congress. We therefore request Congress to provide funds in the amount of $7,000,000 in FY '88 to initiate construction of Parker Lake as per its authorization in the Water Resources Development Act of 1986.

The second project with an unique status is the Red River Chloride Control Project. Congress authorized construction of this project with PL 89-789 and PL 91-611, with removal of natural pollution as a Federal responsibility and the removal of man-made pollution a responsibility of non-Federal interest. The local sponsors have faithfully kept their word and executed their side of the agreements. Both the States of Texas and Oklahoma have expended millions of dollars to control the man-made pollution. Therefore, we fully believe the non-Federal role is being achieved and will continue to be strengthened.

The Federal government began construction of the Red River Chloride Control Project in accordance with the authorizing legislation and the official agreements with the local sponsors. Construction on Area VIII began in February, 1977 and is nearing completion. However, in February of 1982, the Assistant Secretary of the Army for Civil Works notified the local sponsors that non-Federal financing of a major portion of the natural pollution control project would be required to proceed with the construction of the remaining elements of the project.

A "compromise" on this issue was set forth in Section 1107 of the Water Resources Development Act of 1986, which provides that construction of the remaining project elements will be cost shared in accordance with the requirements of Area VIII and such construction shall commence upon transmittal of a report to the Secretary of Army and to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of a favorable findings of the effectiveness of the operation of Area VIII. This report is to be developed by a panel consisting representatives from the USGS, the Texas Water Commission, the National Academy of Sciences and two persons to be appointed by the Secretary with concurrence of the governors of Texas and Oklahoma. The panel's report must be submitted no later than three years after the date Area VIII commences operation.

The Red River Valley Association understands that the Secretary of the Army has the lead in setting up the panel designees, but has not yet taken any action. We strongly recommend that the Secretary discharge implementation of the Area VIII evaluation program and appoint Glenn Sullivan, Secretary of Natural Resources for the State of Oklahoma, who has been recommended by the Governor of Oklahoma.

The last project I wish to discuss is the Denison Dam - Lake Texoma project which was completed in 1944. Authorized project purposes included flood control, hydroelectric power generation, navigation, regulation of the flow of the Red River, and other beneficial purposes. A total of 150,000 acres-feet of storage is presently allocated for water supply, although it was not an original project purpose. Legislation authorizing the Secretary of Army to reallocate an additional 300,000 acre-feet of hydropower storage to water supply storage was included in the Water Resources Development Act (WRDA) of 1986. Designation of recreation as a project purpose was also included in the WRDA of 1986.

Authority for a restudy was provided in resolutions adopted by the U.S. Senate Public Works Committee in 1960 and 1965. The purpose of the restudy is to determine whether it would be advisable to modify the existing project giving consideration to future water resource needs of the area. These include recreation, irrigation, municipal and industrial water supply, additional hydropower, sediment control, and other purposes in addition to the authorized purposes.

A survey report was submitted to the Southwestern Division (SWD) by the Tulsa District (TD) in December 1986. However, this report does not adequately address the many conflicts between existing and future uses (purposes) which have risen to a very high level of intensity and awareness at the current time. The RRVA requests that the report be returned to TD for reanalysis and revisions and that $500,000.00 be provided in the FY 88 Energy and Water Appropriations Bill for the COE to carry out the restudy of Lake Texoma including a joint study effort with the Bureau of Reclamation to consider two upon stream management and multipurpose lakes.

I thank you for this opportunity to share with you my concerns about the development of our Nation's most vital resource, its water.

STATEMENT OF HOMER TANNER, VICE PRESIDENT REPRESENTING TEXAS

Mr. DUGGAN. Thank you, Bill.

Our next witness will be Mr. Homer Tanner, our vice president, representing the state of Texas.

Mr. TANNER. Thank you, Mr. Chairman, Senator Stennis.

My name is Homer Tanner. I am the executive vice president of the Red River Valley in the state of Texas. It is my pleasure to appear before you again.

This year, I am going to second in spades what Congressman Waggonner said in that we want to express our appreciation to you for the things that you have done for us in the past. I want to direct your attention to a project that we have spoken to you here about for some 30 years, now, Cooper Lake and channels.

COOPER LAKE AND CHANNEL, TEXAS

Cooper Lake and channel was mired for many, many years, and this good body gave it some funding in the interim in the amount of about $30 million in the last 3 years.

We were pleased to tell you last year that the legal problems that Cooper Lake and channels had were resolved and that, indeed, Cooper Lake and channels is now a viable project and dirt is flying over there.

Just the other day I checked some initial embankment work that is going on. This year, we are asking you for some $14 million to begin what is called initial construction on embankment and spillway outlets.

Not only that, but the people that have the major water permits out at Cooper Lake that need the water in the Dallas area, those people are proceeding along on schedule. They are putting in a 60-mile pipeline. I have it on the design boards now, and also, the outlet works.

So we request the $14 million, and I think a couple more of those and we will have that one made, and we won't be discussing Cooper Lake and channels with you again anymore up here.

Also, I would like to duplicate what my friend Bill Chapman from Oklahoma had to say about the chloride control projects. He has outlined it, but I won't take the time to go through it again. That is a combination Texas and Oklahoma project, and we want to see that particular event take place.

LAKE WITCHITA, HOLIDAY CREEK, TEX.

I think that the dedication on the initial phase of that is set for May 11 at this point in time. Also, I would like to address very briefly the Holiday Creek in Witchita Falls.

I talked with the Corps of Engineers in the Tulsa District one day last week and they tell me this is a fine example of the Corps of Engineers and a community getting along a good project. They are asking for their capability this year of $1.5 million, and we would like to see you do that.

The Corps thinks this is a fine project. They like the city of Wichita Falls' attitude. The city of Wichita Falls has the money to complete the entire project. I think it is about a 7-year project.

RED RIVER WATERWAY PROJECT, LOUISIANA

We would like to ask you for that help. Also, I have got one more little item. I want to discuss the navigation features of the Red River Waterway project. The navigation features goes from the Old River and the Mississippi River to river mile 294. Well, mile 294 is about a mile from my office as the crow flies.

We think that things are happening on the river. Down below, things are being expedited that we have in our area. I have a firm about a mile from my office that is planning to ship via the Red River as soon as it gets to our area.

We are looking forward to that event and to getting the preconstruction planning beyond Shreveport and mile 294, which is right by my office. We are asking $100,000, and we would appreciate your consideration on that.

Thank you for your time. I look forward to seeing you again.

[The statement follows:]

STATEMENT OF THE RED RIVER VALLEY ASSOCIATION (TEXAS)

Mr. Chairman, Members of The Committee:

My name is Homer Tanner, I speak to you as the Executive Committee Member of the Red River Valley Association from the State of Texas. I am also the General Manager of the Northeast Texas Municipal Water District, a political sub-division of the State of Texas charged with the orderly development of the water resources of the Cypress Creek Basin, a significant area of North East Texas.

I am speaking to you today on behalf of the people living in the Red River Valley to summarize our concerns for the development of water resource projects on the Red River. With me in the audience today are individuals interested in water development that have been; elected - appointed - employed by water related organizations - the business community - the farming community and people who are just plain motivated by a sincere desire to insure adequate water supplies for future generations to save land from caving - to reduce flooding or to enhance our inland waterway system.

We represent literally thousands of Texans. People whose lives and roots are in these communities. People who are making an effort to provide for the future water needs of their children and grandchildren. Many hundreds of valley residents provided input in the presentations we make today.

The specific projects we appear here to support have been documented in detail. The Corps of Engineers has provided capabilities and funding levels, the Association has provided additional supportive evidence, the Texas Department of Water Resources has provided an indepth analysis of the specific requests of Texas' interest and have been submitted for inclusion in the record. I will briefly emphasize some projects of most importance.

Let me first address the Cooper Lake and Channells project. Longtime members of this Committee are aware we first requested funding on this in 1957 -- 30 years ago. The Committee has been most patient and understanding of the delays that have plagued the project. We are most grateful for that patience and the intermediate funding provided in the intervening years, that funding being in the order of 30,000,000 million dollars.

When the legal problems were cleared, appropriated funds were available to begin final design and initial construction and I am pleased to report access roads and initial embankment are under construction.

We now ask your favorable consideration of our appropriation request of 14,000,000 dollars(the Corps capability) to begin dam embankment, spillways and outlet works construction.

I am also pleased to report the two major water permit holders in the project are proceeding on schedule. They are presently in the design phase of the necessary withdrawal facilities and sixty miles of pipeline to convey the water to its destination in the Dallas area.

Let me address the Red River Basin Chloride Control Project. The project will improve the water quality in States of Texas, Oklahoma, Louisiana and Arkansas and is imperative in order to realize full utilization of the Red's water supplies. Presently, more than 1,000 miles of streams in the river basin are contaminated by natural brines. Consequently, waters of the streams and the main stem are not suitable for municipal and most industrial and agricultural purposes. Salt enters the stream from 15 natural sources, 10 of which are located in Texas, the balance in Oklahoma. This is a joint request with my colleagues from Oklahoma.

The project is partly in place and is undergoing review as to the effectiveness of the initial phases. We are excited about the project and look forward to significant improvement in the water quality and wish to reserve the option of appearing here next year with a request for additional appropriations to complete the project.

The Rivers and Harbors Act of 1968 authorized the Red River Waterway Project featuring a navigation channel from the Mississippi River to Daingerfield, Texas a 294 mile stretch, and stabilization of the banks of the Red River from the Mississippi River to Shreveport, Louisiana; Shreveport, Louisiana to Daingerfield, Texas; Shreveport, Louisiana to Index, Arkansas, and vicinity of Index, Arkansas to Denison Dam, Texas. Construction under this authorization has been initiated in the Mississippi River to Shreveport, Louisiana Reach and will be addressed fully by others here. We are excited about this project. My office is located about four crow flying miles from navigation mile point 294. More importantly, a steel processing company located about a mile from my office is discussing utilizing the Caddo-Bossier Port Commission facilities and in fact may be an initial user of the waterway project from Texas. The Caddo-Bossier Port Commission has identified and is working closely with other potential shippers in the vicinity of mile 294.

We urge the resumption of preconstruction planning of the waterway segment from Shreveport, Louisiana to Daingerfield, Texas and urges the Committee to appropriate $100,000 for this purpose in FY 1987.

The Lake Wichita - Holliday Creek project is a fine example of cooperation with the community and the U.S.C.E. working closely to achieve the completion of a needed project. The City has on hand the funds to complete the entire proposed seven year project. We are asking the U.S.C.E. capability and President's Budget amount of 1,500,000 dollars and request your favorable consideration.

The Association appears here today with the four States represented as one with a unity of purpose. I wish to leave with you the feeling that Texas shares deeply the concerns of the other three States and wishes to add our unequivocal support to their requests that the Valley projects be completed in their entirety.

RED RIVER EMERGENCY BANK PROTECTION

STATEMENT OF JOHN F. STROUD, JR., MEMBER, BOARD OF DIRECTORS REPRESENTING ARKANSAS

Mr. DUGGAN. Thank you, Homer.

John Stroud is our next witness. He is representing the state of Arkansas.

Mr. STROUD. Mr. Chairman, Senator Stennis, it is a pleasure to appear again before you in behalf of the state of Arkansas. Senator Bumpers, who was here a little earlier, was Governor of Arkansas 14 years ago and introduced legislation that created the Red River Commission.

We have been here every year since asking you for help with our caving banks, and we appreciate the consistent help you have given us.

I know the difficulty of walking the middle, and our main project, and I am not going to cover all this, but I want to just summarize as you requested.

Our main request for help is emergency bank protection. It has been the greatest source of relief that we have had, and it is still outrageous; it is our greatest need.

In talking with the Corps earlier, apparently it is about a $15 million capability, but we know your problems, and we know that you need money for that navigation project that we also want to get to Shreveport.

We are asking $7.7 million to allow us to perform another revetment project at the most critical caving point on the river and to have the third realignment.

We have had two; one was a double realignment. We need a third, and the Corps is ready to move. In fact, this time last year, Senator Bumpers was the speaker and dedicated that project. That will leave us one more, and these areas where these realignments are needed are the areas that cave the worst and bring the silt downstream to where it does the least good in the navigable channel in Louisiana.

RED RIVER WATERWAY, SHREVEPORT, LA., TO INDEX, ARK.

I would like to mention that we have asked for a much less cost, but certainly, vitally important, $520,000 to continue the preconstruction planning of Red River Waterway, Shreveport to Index, Index being the Arkansas-Texas boundary, and we really are in existence and have been here to see that project to fruition and, eventually, navigation upstream.

I want to tell you how serious Arkansas is about this. We don't have a tax base to raise this money, so we have been gathering it for 14 years from the legislature and from the cities and the counties and putting it in CD's.

We have over $5 million to be applied toward our nonfederal cost, and in this current session that is supposed to end Friday, Governor Bill Clinton is looking for $180 million in shortfall, and we are having another $500,000 added to this program.

It is vital to the state of Arkansas, to south Arkansas. But our Governor and the last several Governors—Bumpers, Pryor, Clinton—have recognized that and have helped us toward that end. We ask that you please continue your assistance to us.

Senator Stennis, I heard you mention "25 years ago," and I can't help but recall the first time I came in this room was 25 years ago with Senator McClelland. I was his legislative assistant back then, and as you know, he had a rather keen interest in water resource development.

But gentlemen, thank you for assistance you have given the state of Arkansas.

Mr. DUGGAN. Thank you, John.

[The statement follows:]

STATEMENT OF JOHN F. STROUD, JR., RED RIVER VALLEY INTERESTS IN ARKANSAS

1. Red River Waterway, Shreveport, Louisiana to Index, Arkansas - for continuation of preconstruction planning;
   President's budget request for FY-88 - none
   Our request - $ 520,000

2. Red River Emergency Bank Protection (Louisiana, Oklahoma Arkansas and Texas);
   President's budget request for FY-88 - none
   Our request - $7,700,000

3. Red River Levees and Bank Stabilization Below Denison Dam (Texas, Arkansas and Louisiana) for construction of flood gate;
   President's budget request for FY-88 - none
   Our request - $ 800,000

4. Reshaping levees on Red River in Arkansas - for construction or preconstruction planning;
   President's budget request for FY-88 - none
   Our request - $ 500,000

5. Red River Bank Stabilization, Index, Arkansas to Denison Dam, Texas (Arkansas, Oklahoma and Texas) for resumption of preconstruction planning;
   President's budget request for FY-88 - none
   Our request - $ 350,000

6. Red River Below Denison Dam, Comprehensive Basin Study (Arkansas, Louisiana, Oklahoma and Texas) for continuation of planning
   President's budget request for FY-88 - none
   Our request - Full Corps Capability

8. Red River Waterway, Mississippi River to Shreveport, Louisiana - to continue construction;
   President's budget request for FY-88 - $87,000,000
   Our request - Full Corps Capability

GENERAL STATEMENT

As attorney for the Red River Commission of Arkansas, I wish to thank the members of this Committee for the opportunity to again express the concerns, needs and priorities of funding vitally needed from the Congress to continue the orderly development of the Red River Valley in Southwest Arkansas.

Twenty years ago, the bank caving in Southwest Arkansas accelerated to such an extent that the levee boards in that area banned together to form an association to present testimony to the Congress with a united voice. At that time, some of the upstream dams in Arkansas and Oklahoma had been completed which substantially alleviated the threat of floods, but which rapidly accelerated the bank caving due to the river remaining at one-half to two-thirds bank full for long periods of time. Since that time upstream dams known as Millwood, Gillham, Dierks and De Queen have been completed which have further reduced the threat of flooding, but which have accelerated the bank caving even more.

The State of Arkansas became concerned at this rapid irreparable loss of the most fertile farm land in Southwest Arkansas and fourteen years ago created the Red River Commission upon the recommendation of then Governor, and now Senator Dale Bumpers. The Commission was vested with the authority to furnish the local cooperation necessary for the construction and study of projects and to coordinate with the Corps of Engineers and the Congress to develop the water resources of the Red River in Arkansas. Southwest Arkansas is fortunate to have an abundance of water, rich soil and timber resources, but we vitally need the assistance of Congress to continue the bank stabilization projects for the preservation of these natural resources.

RED RIVER WATERWAY PROJECT, SHREVEPORT, LOUISIANA, TO INDEX, ARKANSAS

The Congress has funded preconstruction planning for this comprehensive bank stabilization program for several years for the reach of the river from Shreveport, Louisiana upstream to the Arkansas-Texas boundary at Index, Arkansas. Although much needed stabilization work in certain areas has been performed with funding by the Emergency Bank Protection and Red River Below Denison Dam projects, only through the completion of preconstruction planning and then construction of this comprehensive bank stabilization program can the loss of valuable farm land be ended. The Corps of Engineers estimated a few years ago that over 1,000 acres of farm land is lost each year in this reach of the river due to bank caving.

Tens of thousands of dollars have been contributed by the four counties bordering the Red River in Arkansas and by the towns and communities within those counties and over five million dollars has been placed in the Red River Waterway Trust Fund by the Arkansas General Assembly to meet the non-federal costs required upon construction of this project. The Red River Commission is continuing full speed ahead in its efforts to have the non-federal costs in hand when the preconstruction planning is completed so that construction can begin in an orderly manner without great delay. Only a few more years of continued preconstruction planning should be required before the Corps of Engineers will be in a position to proceed to the construction phase.

Not only will this project end the loss of some of the nation's most valuable resources, which this country can ill-afford to lose, but substantial benefits will accrue to the navigation project downstream which is presently under construction. The farm land is now washed downstream only to form worthless sand bars and place tremendous amounts of silt in the channel, both to the detriment of navigation. We, therefore, request an appropriation of $520,000 during fiscal year 1988 to continue preconstruction planning of this comprehensive bank stabilization program.

RED RIVER EMERGENCY BANK PROTECTION (LOUISIANA, OKLAHOMA, ARKANSAS AND TEXAS)

It is imperative that this program continue to be funded to provide bank stabilization works in those portions of the river where the caving is most critical and where stabilization works were not included in earlier authorizations. At many of these locations the river threatens vital flood control facilities and endangers valuable public facilities such as highways, pipelines and bridges.

Approximately six years ago, the first man-made cut-off on the Red River in Arkansas was completed and the second cut-off which eliminated a double bend in the river was completed a little over a year ago and dedicated by Senator Dale Bumpers last spring. The last two realignment projects in Arkansas to be known as Brown and Bear Realignments should be initiated to stop the loss of valuable farmland and to stop the transfer of large quantities of sediment to the navigation system downstream. Funding of the Emergency Bank Protection Program will continue to allow these vital improvements to be accomplished in the areas most critical during the completion of planning still required before a comprehensive bank stabilization program can begin to be constructed. In the summer of 1982, the Red River broke through a narrow strip of land between it and Little

River where a water treatment facility is located for the treatment and transmission of pure drinking water to the city of Hope, Arkansas. Repairs have recently been completed, but preventive bank stabilization works could have been accomplished at a fraction of the cost of those repairs. This is but one example of the necessity for continued funding of these programs to avoid much larger costs which will result from delays of funding.

Continued neglect of these caving banks will substantially worsen alignment of the river, making future realignment for navigation and stabilization more costly and difficult. Many caving banks still have an existing alignment that is usable for the navigation channel when it is authorized, and those banks should be preserved now.

We urge your inclusion of funding of the Emergency Bank Protection program in the amount of $7,700,000 for fiscal year 1988 to remain available until expended. We also ask that from these funds you direct the Chief of Engineers to initiate fully funded contracts in Fiscal Year 1988 for construction of the Temple Revetment and Brown Realignment stabilization measures.

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM

For the past several years no appropriations have been included for projects to be constructed under Red River Levees and Bank Stabilization Below Denison Dam, but it remains an authorized program to meet special needs. A special need exists for the replacement of a completely failed flood control gate and the levee contiguous to it in the McKinney Bayou Drainage Ditch in Miller County, Arkansas. The gate was constructed to control high stages in McKinney Bayou caused by head-water flows and or back-water conditions resulting from high stages on the Red River. Either of these conditions can cause serious flooding of valuable farmland above the failed flood control gate.

It is imperative that the failed flood control gate be replaced before flood stage again occurs on the Red River in that proximity or in the area drained by McKinney Bayou Drainage Ditch. The Red River Valley Association recommends that $800,000 be appropriated as a line item under Red River Levees and Bank Stabilization below Denison Dam for the design ad construction of the replacement flood control gate that has totally failed and collapsed.

The lack of an operable flood gate on McKinney Bayou negates the entire lower McKinney Bayou Protection system which endangers 30,000 acres of farmland with improvements located on them when the flood gauge at Fulton, Arkansas reaches the 20 foot level.

RESHAPING LEVEES ON RED RIVER IN ARKANSAS

The Corps of Engineers has completed a study indicating that the levees along the main stem of the Red River in Arkansas should be reshaped to conform to the new flow line resulting from the study. The reshaping of the levees will allow a more gentle slope on both sides of the levee to increase their integrity and substantially reduce maintenance costs. The Arkansas Red River Commission urges that Congress appropriate the sum of $500,000 to initiate pre-construction planning of this project.

RED RIVER BANK STABILIZATION, INDEX, ARKANSAS TO DENISON DAM

Bank caving is not only a serious problem between Shreveport, Louisiana and Index, Arkansas, but it continues upstream between Index, Arkansas and Denison Dam, Texas. The Congress saw fit to initiate preconstruction planning for a comprehensive bank stabilization project in that reach of the river during fiscal year 1984, but it has not been funded for continued study since that year. We join with our sister states of Texas and Oklahoma in urging the reinstatement of this preconstruction planning project recognizing that many years of planning are required before construction of this type project can begin. We hope that an orderly development up Red

River can continue in the years ahead for the benefit of the people of all four states bordering the Red River. We, therefore, urge you to appropriate the sum of $350,000 to resume this preconstruction planning program during fiscal year 1988.

RED RIVER BELOW DENISON DAM, COMPREHENSIVE BASIN STUDY

We think the administration displayed sound judgment when it included initial funding for a comprehensive study of the entire Red River basin during fiscal year 1984 to include flood control, water supply development, generation of hydro-electric power, development and enhancement of recreational potentials and improvement of the river for navigation and port-site development. The study of hydro-electric power in conjunction with navigation on the Red River will undoubtedly prove of economical benefit if timely studied. We, therefore, urge your approval of the full Corps capability for fiscal year 1988 to continue this comprehensive study.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LOUISIANA

It is a pleasure for the Red River Commission of Arkansas to join with the State of Louisiana to seek continued funding of the construction and completion of Lock and Dam No. 3 and to endorse the resolution that construction begin on Locks and Dams No. 4 and No. 5 as soon as possible. We are well aware of the economic impact that will occur not only to Louisiana, but certainly to Southwest Arkansas when the navigable channel reaches the port of Shreveport, Louisiana. We, therefore, urge your approval of an appropriation of the full Corps capability for fiscal year 1988 for this project.

STATEMENT OF BEN LITTLEPAGE, COMMISSIONER, RED RIVER VALLEY ASSOCIATION

Mr. DUGGAN. Mr. Ben Littlepage is a commissioner of the Red River Water Commission, and this commission has provided the Red River project with some of the finest exposure in the way of public relations that we have.

They have had some fine documentaries and they have been running on television. So I recognize Mr. Ben Littlepage.

Mr. LITTLEPAGE. Gentlemen, it is a pleasure for me to address you today. I have submitted a detailed statement for the record. As a senior member of the Red River Waterway Commission, I served for 11 years as a life-long resident of the Red River Valley.

I would like to assure you of the high value and potential value that the Red River Waterway is to the citizens of the state of Louisiana.

The Waterway Commission is pleased and eager to accept the challenge of completion of the waterway by 1994, and I am here to pledge on behalf of myself and the other members of the waterway commission, that we would like to accept the challenge.

We wish to thank you, the members of the Appropriations Committee, as well as the Members of Congress, and especially the Louisiana delegation, for your support and leadership in having the waterway project funded at the appropriate levels despite the current economic conditions.

AGGRESSIVE RECREATION DEVELOPMENT PROGRAM

I would like to point out to the members of the subcommittee that the Red River Waterway Commission has been very active in the pursuit of this project. We are very proud of our aggressive recreation development program, our agreement in principle to provide upfront financing for hydropower development, and our activity in the development of ports along the river.

Thank you for giving me the opportunity to appear before you and express our views.

[The statement follows:]

STATEMENT OF BEN LITTLEPAGE, COMMISSIONER, RED RIVER WATERWAY COMMISSION OF LOUISIANA

Honorable Ladies and Gentlemen of the Committee, as a senior member of the Louisiana Red River Waterway Commission serving for eleven years and being a life long resident of the Red River Valley, I can assure you of the value and potential of the Red River Waterway Project to Louisiana and its citizens.

The Red River Waterway Commission is pleased and eager to accept the challenge of completing the Red River Waterway by 1994. I am here to pledge in behalf of myself and the other members of the Commission our intention to do our part in seeing that this noble goal is accomplished.

We also wish to thank you, the members of the Appropriations Subcommittees, as well as all of the members of Congress, and especially the Louisiana Delegation, for your support and leadership in having the Waterway Project funded at the appropriate levels despite the current economic conditions.

This year we have identified nine project locations for which we are requesting sufficient funding to implement continuing contracts for the work at these locations. We request that the language of the Appropriations Bill provide that this funding should remain and be available until the completion of the projects. This will require approximately $14.7 Million more than what is in the President's proposed budget for the Red River Waterway Project. It is requested that the names of the projects be included in the Appropriations Bill. A list of the nine project location names and requested funding for each are outlined in the formal written statement which has been provided to you this morning for the written record.

Rights of way for several of the above mentioned jobs have been acquired and are available to the U.S. Army, Corps of Engineers. Work on acquiring rights of way for the remaining jobs will be completed so that work can begin in Fiscal Year 1988.

I would like to point out to the members of this Subcommittee that the Red River Waterway Commission has been very active in the pursuit of this project. We are very proud of our aggressive recreational development program, our agreement in principal to provide up-front financing for hydropower development, and our activity in the development of ports along the Red. We have taken the lead in urging that a regional economic development plan be drafted to assure ourselves and the people of the Red River Valley that everything that can be done to take economic advantage of this project is being done. We are doing this in a manner that is supportive of the Administration's goal and of Congress's goal to reduce the national deficit. We believe that our request is compatible with the goal.

We wish to be recorded in support of the basin-wide request made by the Red River Valley Association and the representative of the other states in this basin testifying here today because all of these projects are interrelated. What happens to the river upstream affects us in Louisiana and what we do to the river down here affects our members in the upstream states. That is why the Red River Valley Association has existed all these decades. Thank you very much for giving me the opportunity to appear before you and express our views.

STATEMENT OF DON JONES, MAYOR, BOSSIER CITY, LA.

Mr. Duggan. Our final witness is the mayor of Bossier City, Don Jones, and I wouldn't be surprised after a little more of Louisiana seasoning in politics if he doesn't become a familiar sight here in Washington. He has done a great job and is a great supporter of the Red River project.

Mr. Waggonner. He doesn't need it now. He has got the seasoning in Louisiana.

Mr. Jones. Mr. Chairman and Senator Stennis, we appreciate the opportunity to be with you today. As you know, studies about the national benefit from this waterway project, not just its local impact—this is not just jobs for Louisiana, Arkansas, Texas, and Oklahoma, but rather jobs for America.

Competitive transportation rates allow area manufacturers and their trading partners in Illinois, Pennsylvania, Indiana, and Ohio to continue trading with each other while enhancing our participation in a global economy.

Eighty manufacturers in northeast Texas, southwest Arkansas, and north Louisiana import some 4,000 individual shipments per year with a value of $482 million. The same manufacturers account for 4,100 individual export shipments with a value in excess of $40 million.

The potential tonnage of general cargo already indicated is at 1.9 million tons annually. We request a program construction schedule so as to facilitate development of ancillary provisions enhancing various port projects.

Senator Johnston's proposal ensures this, and we support that initiative. We applaud Senator Johnston's encouragement to the Corps during the earlier hearings of this committee to provide schedules for completing the Red River Waterway if, No. 1, given $100 million annual funding; No. 2, going at full Corps capability.

The Corps answer that it could be completed in 1994 or early 1995, we urge this committee to continue to direct this course for both a schedule so that we can intelligently and efficiently plan to develop ports, industry, and commerce; and second, earliest completion so that we can realize the benefits sooner, save interest on our money; use lower construction costs, and create construction jobs.

We appreciate the opportunity to visit with you today, and we want to, again, thank you for all you have done for the Red River Waterway project in the years past and what you will do in the years to come.

Thank you.

Senator Johnston. Thank you very much.

Mr. Duggan. We hope that you will get his message to Mr. Dawson.

Before we go, I would like to introduce Ed Harris, our president.

Would you stand? I would ask everybody in the room in support of our project to stand. [Applause.]

Thank you for hearing us.

ADDITIONAL PREPARED STATEMENTS

Senator JOHNSTON. Again, thank you for your continued interest in this project.

I see you have some other statements here, which, without objection, I will make part of the record.

[The statements follow:]

STATEMENT OF THE CADDO-BOSSIER PARISHES PORT COMMISSION

The members of the Caddo-Bossier Parishes Port Commission add our wholehearted support and endorsement of the Red River Valley Association' Program of Work for Fiscal Year 1988, and respectfully request that the Subcommittees on Appropriations submit to the full House of Representatives and the Senate a recommended appropriation reflective of the amounts requested by the Red River Valley Association for the various projects cited in their 1988 Program of Work.

This request is made by the Caddo-Bossier Port Commission based upon the numerous overall benefits which will accrue to Northwest Louisiana, Northeast Texas and Southwest Arkansas from the completion of the Red River Waterway project — namely, navigation to the Shreveport-Bossier City, Louisiana, area (of which we are particularly interested); improved availability of clean, potable water; the potential for hydroelectric power generation; improved recreational facilities; and, perhaps most important for our area and our state, the number of construction and permanent jobs continuation of this project will create.

The creation of new jobs is critical to the future well being of this area. As of January 1987, the unemployment rate in the Shreveport SMSA was 13.8%, more than twice the national average, and the worst rate experienced locally since records began being kept. The state of Louisiana has an even higher unemployment rate, and the surrounding states of Texas and Arkansas, which would both be beneficially impacted by the completion of the Red River Navigation project are also suffering severe economic problems.

In the year and a half period between July 1985 and December 1986 the Shreveport-Bossier economy lost a total of more than 10,500, some 4,500 jobs in the manufacturing sector, (including 3,000 lost at the Shreveport AT&T plant alone between July and November 1985), 2,000 jobs lost in the oil and gas industry, and 3,900 jobs lost in the retail sector. In the vast majority of these job losses, local employers were forced to reduce their workforces or close their operations due to the high cost of doing business and the increased volume of imports coming into this country and this area.

In an effort to remedy some of the ills facing our local businesses and industries, the Port Commission, over the past two years, has taken the lead in obtaining a Customs Port of Entry for Shreveport-Bossier City, and has an application pending for a Foreign Trade Zone, which will be utilized by AT&T and other local companies to reduce its costs of operation sufficient enough so that they can market their products internationally on a more competitive basis.

As a result of our efforts pertaining to the Customs Port of Entry and the Foreign Trade Zone we have uncovered a wealth of information proving the vital need that exists locally for water transportation of goods. Today, more than 80 manufacturers in the three state Ark-La-Tex area (southwest Arkansas, North Louisiana and Northeast Texas) import some 4,000 individual shipments a year, with a value of more than $482 million. Our area's manufacturers account for more than 4,100 individual export shipments, with a value of over $40 million. A vast majority of the tonnage moving through this area is from steel and other heavy components, such as sand, used by our Libbey Glass plant — products which could more economically be shipped via water than by rail or truck. A list of some of the Ark-La-Tex companies that would benefit by the ability to ship by water to reduce their transportation costs is included herein.

In an effort to keep the jobs still remaining in the area and to attempt to create new jobs where feasible, a major multi-pronged community effort is currently underway to help local businesses and industries compete for more effectively for international trade. These efforts include:

A major effort on the part of AT&T, the Louisiana Congressional delegation, city/parish/state officials and local economic development groups to recruit AT&T suppliers into locating manufacturing and/or warehousing operations in the community, particularly in the FTZ which will be located immediately adjacent to the Shreveprot AT&T plant. By doing so, AT&T will be able to convert to a "just in time" inventory control system, which, it is hoped, will be reflected in price reductions enabling AT&T to sell more of its products overseas. Additionally, many of the suppliers AT&T is contacting are located in the Far East, and if negotiations can be successfully concluded with any or all of these foreign corporation, it could mean the creation of jobs by foreigners which were primarily responsible in the first place for the loss of 3,000 AT&T jobs in 1985.

The creation of a Foreign Sales Corporation which would extend FSC benefits, including tax reductions and the opening of new and additional foreign markets, to small and medium sized exporting companies in the Ark-La-Tex.

Sponsorship by the cities of Shreveport and Bossier City, the Chambers of Commerce of Shreveport and Bossier City, AT&T, the Port Commission and a number of others of a Shreveport-Bossier Japanese Trade Mission with the express purpose of promoting this area as a location for manufacturing and distribution facilities for Japanese companies. The mission has already hosted one trip to the Far East, under the leadership of Congressman Buddy Roemer, and a second trip is planned to take place in May 1987. To date the mission has resulted in visits to Northwest Louisiana by representatives of Japanese and Korean firms and banks, including a consultant with the Long Term Credit Bank of Japan, Ltd., whose prime concern was determining the extent of railroad and barge capaibilities available in the local community. This mission also ties in with the efforts to recruit foreign suppliers of AT&T to locate here.

dhe members of the Caddo-Bossier Port Commission fully realize that our nation faces urgent economic problems, and that funding for all programs must be designed with certain constraints in order to develop a federal budget with the lowest possible deficit. At the same time, the Port Commission members believe the Red River Valley Association has requested funding which meets this criteria, and therefore, we urge you to provide a funding level sufficient to allow the completion of the Red River Navigation project at the earliest possible time.

Below we have provided information which briefly outlines some of the many benefits which will accrue to this area with the completion of the Red River Navigation project. We ask that you consider these factors as you develop your recommendation for Fiscal Year 1988 funding for the continuation of the Red River Navigation project

SPECIFIC BENEFITS ACCRUING TO NORTHWEST LOUISIANA, NORTHEAST TEXAS AND SOUTHWEST ARKANSAS UPON COMPLETION OF THE RED RIVER NAVIGATION PROJECT

(Information derived from Feasibility Study prepared by Tippett-Abbett-McCarthy-Stratton and Port Users Survey prepared by Griswold Engineering Company.)

POTENTIAL TRIBUTARY AREA

Boundary limits

1. 60 miles east of Shreveport-Bossier City.
2. 110 miles north of Shreveport-Bossier City.
3. 70 south of Shreveport-Bossier City
4. 220 miles west (to Dallas-Ft. Worth)

Demographics

1. Land Mass composed of 39,000 miles, covering 53 counties and parishes in Louisiana, Texas, Arkansas and Oklahoma.
2. 6,000 manufacturing establishments in tributary area; more than one-third have 10 or more employees.
3. Shipment of goods by these manufacturers were worth more than $12.1 billion, including more than $5.7 billion in value added.

POTENTIAL TONNAGE

1. 1,890,350 tons of general cargo (total firms contacted: 217; responses from 65) through public port facilities.
2. 1,641,418 tons through private terminal.

DIRECT ECONOMIC BENEFITS

1. Transportation savings for shippers or consignees.
2. Creation of an estimated 4,000 new jobs.
3. Total direct benefits of from $4 million to $6.9 million.
4. Indirect benefits of multiplier effect estimated at $16 million.
5. Provide possible expansion of local companies in export markets.
6. Aid in alleviating what is one of the highest unemployment rates in nation.

COMPANIES INDENTIFIED AS POTENTIAL SHIPPERS ON THE RED RIVER
IDENTIFIED IN CUSTOMS PORT OF ENTRY SURVEY AND THROUGH PERSONAL CONTACTS

COMPANY	LOCATION	PRODUCTS	TONNAGE IMPORTED	TONNAGE EXPORTED	MAJOR PORT USED
Alloy Piping Products	Shreveport	stainless steel, buttweld pipe fittings	97		Houston
B&B Cut Stone Company	Shreveport	marble	200		Houston
BailSco Blades	Shreveport	cast aluminum fans	20		Houston
Builders Supply	Shreveport	Steel, wire and cement building products	100		Houston
Caddo Door & Veener	Bossier City	plywood	5,236		New Orleans
Cooper Tire Co.	Texarkana	crude rubber	12,000		New Orleans
Delta Manufacturing	Bossier City	light guage galvanized steel	1,050		Houston
Dunham Mfg. Co.	Minden, LA	steel and trailer parts	3,000		Houston
Freidman, Inc.	Longview, TX	steel coils	unk	unk	Houston
Frymaster Corp.	Shreveport	deep fat fryers		90	Houston
General Electric	Shreveport	Carbon and silicon steel	2,000		Houston
LAVALCO	Shreveport	steel fittings	2,300	10	Houston

COMPANY	LOCATION	PRODUCTS	TONNAGE IMPORTED	TONNAGE EXPORTED	MAJOR PORT USED
Libbey Glass	Shreveport	import-manufacturing equipment, silica sand, limestone, glass making molds export-finished glass products	697	 360	Houston Miami
Louisiana Assn Blind	Shreveport	tablet paper	1,000		Houston
Marathon LeTourneau	Longview, TX	heavy duty equipment		3,000	Houston
McElroy Metals	Shreveport	inbound-coiled steel and aluminum outbound-metal building components	2,900 total		Houston
Newspaper Production	Shreveport	Newsprint	6,000		Houston
Olin Corp.*	Shreveport	Chemicals	unk		unk
Premetco Int'l*	Shreveport	imports-aluminum & stainless steel exports-finished insulated pipes	220	220	Houston
Riley Beaird	Shreveport	Pressure vessels, storage tanks	1,000	3,400	unk
Sachs-Dolmar	Shreveport	chain saws	120,000		Houston
Service Steel & Pipe	Shreveport	steel	22,000		Houston
South States, Inc.	Shreveport	builders supply-nails, fencing, pipe	7,444		New Orleans
Specialty Oil Co.	Shreveport	imports-ethelene glycol exports-lubricants	1,000 3,100		New Orleans

COMPANY	LOCATION	PRODUCTS	TONNAGE IMPORTED	TONNAGE EXPORTED	MAJOR PORT USED
Steel Forgings, Inc.	Shreveport	steel welding pipe fittings		29,163	Various
Sun Oil Co.	Houston	Crude oil (located in Red River basin)		unk	Houston
Superior Supply Co.	Shreveport	tubular goods	10,000		Houston
TSE International	Shreveport	machinery		163	Houston
Tri-State Oil Tool	Bossier City	oil field equipment		350	Houston
UOP Inc.	Shreveport	imports-various raw materials	200		New Orleans
		exports-catalysts & desorbents		3,000	Houston
Unit Distribution	Shreveport	Honda motorcycles/lawn equipment	20,000		Long Beach/Seattle
Wonderline Toys	Bossier City	import-electronic components	10		Houston
		exports-gym sets and finished toys		200	
Totals			218,674	39,965	

Customs Port of Entry Survey information dates to March 1985; personal contacts with companies regarding potential use of Red River for shipping extends through March 1987.

* These companies (Premetco International and Olin Corp.) purposely located their facilities immediately adjacent to the Caddo-Bossier Port and Industrial Park complex so that they can ship on the Red River.

COMPANIES RESPONDING TO SURVEY OF POTENTIAL PORT USERS CONDUCTED FOR PORT COMMISSION (1981) AND BOSSIER CITY MAYOR (1986)

COMPANY	LOCATION	PRODUCTS	TONNAGE	RECEIVED	SHIPPED	TO/FROM
Gilbert Pipe and Sup	Shreveport	pipe	1,000	x		East Coast, Gulf coast, & Pittsburgh, PA, area
Atlas Processing Co.	Shreveport	petroleum products	317,409	x	x	Shipping now via Ouachita R.
Cobb Industr Foundry	Marshall, TX	Scrap metal for remelting	20,000	x	x	all points nationally
GenStar	Shreveport	Fiberglass material	1,000	x		Charleston
Industrial Steel Prod	Shreveport	Structural Steel	5,000	x		Chicago
O'Neal Steel, Inc.	Shreveport	ferrous metals	12,000	x		Mid-west, Europe, Asia
P & H Tube Division	Bossier City	steel coil and pipe	30,000	x	x	Ohio, Penn, Ky, Ill all points nationally
Port Petroleum, Inc.	Shreveport	Crude oil and petroleum products	195,000	x	x	Gulf Coast
Sovereign Supply Co.	Shreveport	tubular goods	50,000	x	x	New Orleans
Long Star Steel	Longview, TX	imports-raw materials exports-steel products	2,247,500* 788,000*	x	x	Houston Houston
			631,000* without Lone Star tonnage			

Tonnage is annual estimate.

* Lone Star tonnage not included as current market conditions has caused sharp decease in company's output. However, company continues to hope for change in market conditions which would result in production output improving to past performances.

STATEMENT OF OFFICE OF PUBLIC WORKS, LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

RED RIVER BASIN

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana for the coordinated planning and development of water resources including flood control, navigation, drainage, water conservation, and irrigation projects. Therefore, this statement is presented on behalf of the State of Louisiana. We are pleased to present the following endorsements and recommendations for Fiscal Year 1988 appropriations for Louisiana projects in the Red River Basin.

RECOMMENDED APPROPRIATIONS FOR RED RIVER BASIN PROJECTS
FISCAL YEAR 1988

LOUISIANA PROJECTS	BUDGET ALLOWANCE	AND	LOUISIANA REQUEST
Construction			
Red River Emergency Bank Protection		$ -0-	
Red River Levees & Bank Stabilization Below Denison Dam		-0-	
Red River Waterway, Mississippi River to Shreveport	87,000,000		101,700,000
Alona-Rigolette Area Red River, LA		-0-	
Planning			
Red River Waterway, Shreveport, La. to Vicinity of Index, Ark.	-0-		520,000
Red River Waterway, Shreveport, La. to Dangerfield, Texas	-0-		100,000

Operation and Maintenance	Estimated Obligation	and	Louisiana Request
Bayou Bodcau Reservoir		$ 305,000	
Bayou Pierre		38,000	
Caddo Lake		66,000	
Red River Waterway, Mississippi River to Shreveport		3,729,000	
Wallace Lake		112,000	

NOTE: The projects listed above are only in Louisiana and directly affecting the State. We realize that there are others outside of Louisiana that are vitally important to the Basin and we endorse the recommendations of the Red River Valley Association.

RED RIVER EMERGENCY BANK PROTECTION
(Budget: $-0-) (Request: See Commentary Below)

RED RIVER LEVEES & BANK STABILIZATION BELOW DENISON DAM
(Budget: $-0-) (Request: See Commentary Below)

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT
(Budget: $87,000,000) (Request: $101,700,000)

The above three (3) projects comprise the only mechanism for controlling the last major river basin in the United States remaining to be developed. Both the Red River Waterway Project and the Red River Emergency Bank Protection Project were authorized by the River and Harbor Act of 1968; Red River Waterway Project basically for navigation and the Red River Emergency Bank Protection basically for bank stabilization. The Red River Levees and Bank Stabilization Below Denison Dam project is an older project and is the only comprehensive flood control program on the Red River.

Over the past few years, the administration has required the U.S. Army, Corps of Engineers to systematically phase out the first two (2) of these projects in the state of Louisiana, leaving only the Red River Waterway Project funded in the state. The Corps has complied. There was no money appropriated for these two (2) projects last year and there is none budgeted this year and no capability to use any is shown by the Corps of Engineers. This was done because it was thought that many of objectives of these two (2) projects would be accomplished by construction of the third, the Red River Waterway Project.

Nine (9) project locations for which we are requesting sufficient funding to implement continuing contracts have been identified. It is further requested that the language of the appropriations bill provide that funding remain available until completion of these projects. This will require fourteen and seven-tenths ($14.7) million dollars more than what is in the President's budget for the Red River Waterway Project. It is requested that the names of the projects be included in the appropriations bill.

NAME	FUNDING
Gahagan Realignment	$ 4 Million
Coushatta Capout	$ 2 Million
Piermont Realignment	$ 4 Million
Nicolas Realignment	$ 3 Million
Cupples Revetment	$ 1 Million
Howard Realignment	$ 0.2 Million
Nantachie/Red Bayou Extension	$ 0.2 Million
Crane Revetment	$ 0.2 Million
Eureka Revetment	$ 0.1 Million
TOTAL	$14.7 Million Additional

If the above projects cannot be funded under the Red River Waterway project, then they should be funded under the more appropriate or the other projects.

RED RIVER WATERWAY, SHREVEPORT, LA. TO VICINITY OF INDEX, ARK.
(Budget: $-0-) (Request: $520,000)

The Red River Waterway, Shreveport to Index reach is an important part of the authorized project. We urge that $520,000 be appropriated to continue planning in this area.

RED RIVER WATERWAY, SHREVEPORT, LA. TO DANGERFIELD, TEXAS
(Budget: $-0-) (Request: $100,000)

Similarly, the Red River Waterway, Shreveport to Dangerfield reach is an important part of the authorized project. We urge that $100,000 be appropriated to continue planning in this area.

The State of Louisiana, its Office of Public Works, in particular, wishes to commend the Appropriations Sub-Committees on Energy and Water Development and express our appreciation for the foresight and understanding exhibited in the past of the need for authorizing adequate levels of appropriations for water resources projects which are vital to the national interest. We solicit your further consideration of the recommendations presented herein.

STATEMENT OF THE BOSSIER (LA.) CHAMBER OF COMMERCE

A community of any size should not hinge its economic success on only one asset (corporate or physical). The not-so-secret secret of economic development and stability is diversification.

Louisiana, Texas, and Oklahoma are today facing unprecedented economic difficulties as a result of violating the principles of diversification. We depended on the oil and gas industry (in some areas almost exclusively) as the economic backbone of our area. Obviously, the international situation and other far reaching economic factors have contributed to the devastation of that sector.

An additional reality all of our national communities must face is the fact that we are all now part of a world market, and our competitors are not just across the street, they may be across an ocean.

The United States as well as our local communities must agressively pursue our advantages in this world competition. We must as a nation take advantage of world markets and, thusly, to diversify the bases of our lccal economies. In the Red River Valley we have a great chance to create a major transportation system that will serve the Central United States with a far reaching opportunity for worldwide distribution, and eventually large scale industrial manufacturing located close to the distribution point.

The physical assets needed to complete this plan include Interstates 20 and 30 East and West, I-49 North and South, New Orleans to Kansas City, the rail systems of Illinois Central, Kansas City Southern, Union Pacific and Southern Pacific, foreign trade zone status and most importantly the completion of the Red River Waterway Navigation Project. All of these systems are currently in place or under construction. The continual funding of these projects not yet finished and the completion of the Central United States distribution network is a must for our country's competitiveness world wide. Low cost transportation reduces over all cost of goods and our products look just that much better in the world market.

It is for these reasons that the over one thousand members of the Bossier Chamber of Commerce wholeheartedly endorse the Red River Waterway Project, not only as an economic boost to our area but as a distribution must for the economic well being of the Central United States.

This statement is endorsed by the following Chambers of Commerce: in Louisiana: Alexandria, Natchitoches and Coushatta; in Oklahoma: Durant and Idabell; in Texas: Denison, Texarkana and Dangerfield.

STATEMENT OF THE BOARD OF COMMISSIONERS, BOSSIER LEVEE DISTRICT

This statement is presented in behalf of the Board of Commissioners of the Bossier Levee District and the citizens of Bossier and Red River Parishes, Louisiana, to urgently request adequate funding for the Bayou Bodcau and Tributaries Project for Fiscal Year 1988.

Congress, in 1956, authorized the study of the Bayou Bodcau and Tributaries Project in Bossier and Red River Parishes. In 1965, after nine years of studies and delays and after a well justified plan of improvement was developed, the project was finally authorized for construction. In 1974, after nine years of delays, studies and preconstruction planning, construction was finally begun, and the project was progressing satisfactorily.

Then in March, 1977, this project along with many other water resource projects throughout the Nation, was reviewed by the Department of the Army at the request of the President, under new criteria for enviromental, economic, safety and other factors. Although many other projects failed, this project passed all tests under the new review criteria; however, a study team, appointed by the President, arbitrarily decided that annual benefits in excess of project costs, were not adequate to offset the adverse enviromental effects, and it was recommended that the project be terminated. Congress subsequently passed legislation modifying the project and eliminating those projects features providing the greatest benefits to the people of the area.

At the time the project was delayed, the levee portion of the Bayou Bodcau and Tributaries Project was approximately 30% complete and no channel improvement work had been accomplished. The State of Louisiana, the Bossier Levee District, and other government agencies within the levee district began construction on the channel feature of the project in 1981. Since the initiation of the channel project, over $4,000,000 has been spent to complete the channel features. The State of Louisiana and the interested local agencies in Bossier and Red River Parishes realize the importance of this project and have spent local funds to construct the channel portion of this project.

The Bayou Bodcau and Tributaries Project is a complex project for the solution of complex and interrelated drainage and flood control problems. Both levee construction and channel improvement work are project features each of which depends on the other for successful operation of the overall project. The Sponsors of this project cannot complete this very important project without Federal participation as their funds are committed to the extreme limits presently and in the future.

In the Fiscal year 1982, Congress passed legislation mandating the Bayou Bodcau and Tributaries Project be constructed as originally authorized. However, since the projects authorization in 1965, land use changes have occurred within the project limits, especially south of Bossier City. Some lands that were predominately agricultural are now being used for residential development.

The U. S. Army Corps of Engineers have informed the local sponsor that some 5,000 acres of flood easements will have to be obtained south of Bossier City, some of which contain substantial residential development. The flood easements south of Bossier City were not included in the project as authorized and it is presumed that the authorized project intended to protect all lands subject to flood below Bossier City. Because of the land use changes, the U.S. Army Corps of Engineers has recommended that a comprehensive review of the remainder of the Project be undertaken which is scheduled to be completed in 1985, another lengthy delay to the timely completion of this project.

We are therefore urging that Congress fund the Bodcau and Tributaries Project at the maximum capability of the Corps of Engineers and that Congress urge the Corps of Engineers to complete the comprehensive review of the project in a timely manner so as project completion can be achieved at the earliest possible date.

STATEMENT OF THE RED RIVER VALLEY ASSOCIATION

RED RIVER VALLEY ASSOCIATION
FUNDING REQUESTS FOR FISCAL YEAR 1988

The following provides a quick review of the funding requests contained in the Red River Valley Association's Program of Work for FY88. Specific information on the individual projects can be found on the page indicated.

PROJECT	RRVA REQUEST
BASIN WIDE PROJECTS	
RED RIVER WATERWAY PROJECT	$ FCC
RED RIVER BASIN CHLORIDE CONTROL	FCC
RED RIVER BASIN COMPREHENSIVE STUDY	FCC
BANK STABILIZATION OF THE RED RIVER	
Levees and Bank Stabilization Below Denison Dam	3,000,000
Emergency Bank Protection	7,700,000
Bank Stabilization Index, Arkansas, to Denison Dam	500,000
MISSISSIPPI RIVER AND TRIBUTARIES FLOOD CONTROL PROJECT	FCC
ARKANSAS PROJECTS	
Red River Waterway Project -	
Shreveport, LA, to Index, AR	520,000
Index, AR, to Denison, TX	350,000
Reshaping Levees	500,000
LOUISANA PROJECTS	
APPROPRIATION RESOLUTIONS	
Cypress-Black Bayou Watershed	FCC
Bayou Bodcau and Tributaries	FCC
Atchafalaya Basin	FCC
Red River Backwater Area	FCC
Aloha-Rigolette Project	6,900,000
Lower Red River South Bank Levee	FCC
Eastern Rapides-South Central Avoyelles Drainage District	FCC
Lower Red River Levees	FCC
AUTHORIZATION AND/OR APPROPRIATION RESOLUTIONS	
Bayou Cocodrie and Tributaries	FCC
Bayou Rapides Pumping Station	FCC
Red River Master Plan for Recreation	FCC
Red River Hydropower/Study	FCC

FCC = Full Corps of Engineers Capability

OKLAHOMA PROJECTS

APPROPRIATION RESOLUTIONS

Lukfata Project	FCC
McGee Creek	8,500,000

AUTHORIZATION AND APPROPRIATION RESOLUTIONS

Parker Lake	FCC
Bureau of Reclamation	FCC

TEXAS PROJECTS

APPROPRIATION RESOLUTIONS

Cypress Basin	FCC
Cooper Lake and Channels	14,000,000

AUTHORIZATION RESOLUTIONS

Red River Above Denison Dam-Crowell Site	FCC
Texoma Diverson Project	FCC

PLATFORM, RESOLUTIONS AND PROGRAM OF WORK

INTRODUCTION

The Red River Valley Association is a voluntary group of citizens banded together to advance the economic development and future well-being of the citizens of the four state Red River Basin area in Arkansas, Louisiana, Oklahoma and Texas.

For the past 62 years the Association has done notable work in the support and advancement of a program to develop the land and water resources of the Valley to the beneficial use of all the people. To this end, the Red River Valley Association offers its full support and assistance to the various Port Authorities, Chambers of Commerce, Economic Development Districts and other local governmental entities in developing the area along the Waterway.

The resolutions contained herein were adopted by the Association during its 62nd Annual Meeting in Shreveport, Louisiana, on February 9-11, 1987, and represent the combined concerns of the citizens of the Red River basin area as they pertain to the goals of the Association, specifically:

....Economic and Community Development
....Flood Control
....Bank Stabilization
....A Clean Water Supply for Residential, Commercial, Industrial and Agricultural Use
....Solar and Hydroelectric Power Generation
....Navigation

The Red River Valley Association is aware of the constraints on the federal budget, and have kept those restraints in mind as the resolutions were adopted. Therefore, and because of the far-reaching regional and national benefits addressed by the various projects covered in these resolutions, we urge the members of Congress to review the materials contained herein and give serious consideration to funding the projects at the levels requested.

BASIN WIDE PROJECTS

RED RIVER WATERWAY PROJECT

The Rivers and Harbors Act of 1968 authorized the Red River Waterway Project featuring a navigation channel from the Mississippi River to Shreveport, Louisiana, and Daingerfield, Texas; and stabilization of the banks of the Red River from the Mississippi River to Shreveport, Louisiana/ Shreveport, Louisiana, to Daingerfield, Texas/Shreveport, Louisiana, to Index, Arkansas/and vicinity of Index, Arkansas, to Denison Dam, Texas. Construction under this authorization has been initiated in the Mississippi River to Shreveport, Louisiana, reach.

Completion of the Red River Waterway will significantly boost the economy throughout the river basin and reduce widespread unemployment of the area. Average annual shipping on the waterway is expected to be over 12 million tons, and estimated benefits are in the amount of $132 million annually. This type of progress should not be denied citizens of the Red River Basin and the nation. In order to begin realizing project benefits and minimize future project cost increases, planning, design and construction should proceed in an orderly fashion in order to achieve project completion in a reasonable period of time.

With the Red River Navigation project's Lock and Dam #1 completed, and the second structure, the John H. Overton Lock and Dam, over 95% complete, the Red River Valley Association believes it an economic imperative that construction on the remaining three locks and dams continue on an established and organized schedule so that the project is completed on the Shreveport-Bossier City reach during FY 1994. Construction on Lock and Dam #3 began during FY86 with the construction of a levee setback. Specifically, we call upon Congress to continue construction on Lock and Dam #3 in earnest during FY 1988, and to endorse the resolution that Locks and Dams #4 and #5 begin construction as soon as possible.

At present, the communities of Alexandria/Pineville, Natchitoches, Colfax, and Shreveport/Bossier City are in the process of planning and developing public port facilities for their respective areas.

Alexandria/Pineville, in a cost-reimbursable construction contract with the Corps of Engineers, initiated construction of a port facility in 1985 and are planning for full development of their port facility.

The Caddo-Bossier Port Commission has already purchased 1,100 acres for a public port/industrial park complex, and is planning to acquire an additional 900 acres because of the intense interest for a public port facility among existing industries in the Port Commission's service area which extends to Dallas-Ft. Worth. (A port users survey undertaken for the Port Commission in 1981 shows a total of more than 12 million tons of cargo would go through a public port facility in the Shreveport/Bossier City area from companies now existing in the Ark-La-Tex.)

Planning to ensure that public port facilities will be ready to benefit the local, state and national economy when navigation is returned to these communities has been made tremendously difficult because of the lack of a firm construction schedule for the remaining three Locks and Dams. Thousands of badly needed jobs are at stake, and, therefore, the Red River Valley Association urges Congress to appropriate construction funds for FY88 for the full capability of the Corps of Engineers in order to allow the continued orderly construction of the remaining three Locks and Dams so that they can be completed by FY94 to allow sensible planning to proceed, and to ensure that the project lives up to its full economic development potential in the soonest possible time frame.

Additionally, the Red River Valley Association urges Congress to provide $100,000 for resumption of preconstruction planning on the waterway segment from Shreveport, Louisiana, to Daingerfield, Texas; $520,000 for preconstruction planning on the segment from Shreveport, Louisiana, to Index, Arkansas; and $350,000 for preconstruction planning on the segment from Index, Arkansas to Denison, Texas. These funding levels are required for FY88 to result in comprehensive coordinated advancement of these basinwide features. Planning on the upper reaches must continue in order to initiate construction which would complement ongoing construction in the lower reach and ultimately provide the maximum project benefits to the people of the Red River Basin and the nation.

RED RIVER BASIN CHLORIDE CONTROL

The availability of an ample supply of clean water for use by the communities along the Red River has become an increasingly major concern of the millions of citizens residing in the basin. More and more, communities along the river are finding themselves faced with critical shortages of water for current as well as future use. Solutions being developed by individual communities are not only extremely costly, but in many cases, are leading to unacceptable rivalry between the states and communities along the river.

The Red River Valley Association, because of this need for a reliable clean water supply for economic growth as directly related to agriculture, municipal, and industrial benefit, is vitally concerned with the control of the ten natural salt pollution areas within the upper Red River Basin. The Association has actively supported the work of reducing man-made pollution of the river and has followed, with keen interest, the work of the Corps of Engineers in finding sources of natural salt pollution and devising ways of abating them.

Construction of a ring dike to test application of backhead as a means to suppress individual brine springs was completed at Estelline Springs, Texas, (Area V) in 1974. Today, the structure is operated as a permanent control installation and successfully contains approximately 80% of the total chloride load emitted from Area V. Passage of the 1966 and 1970 Flood Control Acts (P.L. 91-611) authorized construction of measures to control the natural salt pollution from Areas VI, VII, VIII, IX, X, XIII, XIV, and XV in the basin, subject to the provision that construction on the project could not be started until approved by Wichita River prior to the required approval by the Secretary of the Army was authorized by the 1974 Water Resources Act. Construction on Area VIII, which includes the Truscott Brine Lake, was begun in February 1977, and is nearing completion.

BASIN WIDE PROJECTS (Continued)

The approval of the Red River Chloride Control report, submitted to the Secretary of the Army in August 1977, was deferred pending an economic re-analysis conducted by the Corps of Engineers. The economic re-analysis, which reaffirmed the economic feasibility, was submitted to the Secretary of the Army for final action in 1981. However, the Secretary took the position that present administrative policy dictates that non-federal interests must commit to repay a major portion of the total project costs before further construction could be approved.

A "compromise" on this issue was set forth in Section 1107 of the Water Resources Development Act of 1986, which provides that construction of the remaining project elements will be cost-funded in accordance with requirements for Area VIII. Section 1107 designates that the panel shall consist of representatives from the USGS and the Texas Water Commission, a person selected by the National Academy of Sciences, and two other qualified persons to be appointed by the Secretary with concurrence of the governors of Oklahoma and Texas. The panel's report must be submitted to the Secretary and designated Senate and House Committees no later than three years after the date the Area VIII commences operation.

The Red River Valley Association understands that the Secretary of the Army has the lead in setting up the panel designees, but has not yet taken any action. We strongly recommend that the Secretary discharges implementation of the Area VIII evaluation program.

RED RIVER BASIN COMPREHENSIVE STUDY

The Red River Basin Comprehensive Study, authorized by P.L. 98-63, 30 July 1983, was initiated in October 1983. A reconnaissance report was submitted in March 1985 by the Tulsa District of the Corps of Engineers which primarily covered Oklahoma. Feasibility level studies are scheduled for completion in September 1988 by the Tulsa District. The Vicksburg District of the Corps of Engineers will undertake its reconnaissance studies and initiate feasibility studies upon receipt of funds. The comprehensive study will recommend measures for: flood control, development of water supply, treatment and conveyance facilities, generation of hydro-electric power, development and enhancement of the recreational potentials and enterprises of the region, and improvement of the rivers for navigation and port site development.

The Red River Valley Association agrees with the position Congress has taken regarding cost-sharing on this project (P.L. 98-360) and strongly supports continued funding of the study. The Red River Valley Association also requests Congress to appropriate full Corps of Engineers capability level funds for feasibility studies at 100% Federal cost as per the directive contained in the specific language in the 1985 Energy and Water Appropriations Bill (P.L. 98-866).

BANK STABILIZATION OF THE RED RIVER

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM

Red River Levees and Bank Stabilization below Denison Dam is the authorization for constructing levees, flood control structures, and bank stabilization below Denison Dam. The facilities constructed under this authorization are the first lines of flood protection for the Red River Valley and its citizens. Accelerated and new caving of the river banks of Red River continue to endanger existing flood control structures and levees as well as valuable agricultural lands, highways, railroads, utilities, homes and other valuable resources and improvements within the Red River Valley. A systematic program of bank stabilization and other flood control measures can prevent these disastrous losses that are presently occurring.

Because of the planned construction of the Red River Waterway Project, a dangerous tendency has developed to de-emphasize construction of flood control and bank stabilization works under the Red River Levees and Bank Stabilization program. This tendency should be halted and reversed lest the impression be created that the program is no longer needed or has been completed. Additionally, emphasis should be given to coordination of all levee and bank stabilization work along the river with plans for future navigation. This would help insure proper alignments, thus minimizing future navigation construction costs.

The Red River Levees and Bank Stabilization below Denison Dam Project is the only comprehensive flood control program on the Red River containing authorization for construction of a variety of flood control measures, levees and other flood control works. Some of the projects planned in the original authorization project have not been completed, and these must be constructed in order for the citizens of the Red River to derive necessary flood protection.

No funds were appropriated by Congress for the Red River Levees and Bank Stabilization Below Denison Dam in FY83, and only the minimum amounts were provided in FY84, 85 and 86. Bank caving on Red River has progressed in several locations to a critical state. Railroads, major public highways, levees and other flood control works are threatened, and unless action is taken in the near future, these facilities will be destroyed, endangering lives and property of the citizens of the Red River Valley.

Therefore, it is imperative that Red River Levees and Bank Stabilization Below Denison Dam continue as authorized by Congress and that adequate funding be appropriated to accomplish the construction of this needed protection. The Red River Valley Association recommends that $3 million be appropriated for this project in FY88 for the construction of these improvements and protection.

EMERGENCY BANK PROTECTION

Although Federal projects have been authorized for flood control and navigation, many active caving banks cannot be stabilized because they are not yet sufficiently advanced or not included in earlier authorizations. The result is continuing rampant destruction of valuable lands, threatening vital flood control facilities and endangering high-cost improvements, such as bridges, pipelines, highways, railroads, utilities, cities and towns.

It is urgent that adequate funding of the item "Emergency Bank Protection" be continued to construct bank stabilization work as early as possible in the most critical locations instead of waiting several more years and experiencing the loss of million of dollars due to damages. Further, continued neglect of these caving banks will substantially worsen alignment of the River, making future navigation realignment and stabilization much more costly and difficult. Many present caving banks have an existing alignment that is usable for the authorized navigation channel and should be preserved now.

In view of the critical needs for immediate bank stabilization at many locations along the river, and the great unnecessary losses to caving activity which have been suffered by the people of the Red River Valley in the past and which can be expected to continue in the absence of immediate stabilization construction, the Red River Valley Association requests that the Congress appropriates $7.7 million in FY88 for Red River Emergency Bank Stabilization, so that three of the more critical locations can be stabilized.

BANK STABILIZATION INDEX, ARKANSAS, TO DENISON DAM

Widely fluctuating stages and high flows during the past several years have caused sharp increases in bank caving along the Red River from Index, Arkansas, to Denison Dam. This accelerated bank caving has caused the loss of valuable vital improvements and non-replacable prime agricultural lands. Flood control structures and levees which protect the Valley from disastrous floods are also endangered. These disastrous losses can be stopped by a systematic program of bank stabilization. Progressive construction of such a program is absolutely essential to the safety, growth, and well-being of the Red River Valley. To further delay this vitally needed protection would be short-sighted.

In view of the fact that construction of bank stabilization is so badly needed, and that the states of Oklahoma, Arkansas and Texas have agreed to the authorized cost-sharing requirements, the Red River Valley Association requests that $500,000 be appropriated in FY88 to continue preconstruction planning work.

MISSISSIPPI RIVER AND TRIBUTARIES FLOOD CONTROL PROJECT

The Red River Valley Association endorses the Mississippi River and Tributaries Flood Control Project, including all of its features and components, and stresses the importance of aggressively completing all features, particularly as it relates to the Red River Basin and its improvements. Since the Red River is a major factor in the Mississippi River and Tributaries Flood Control Project, the Red River Valley Association endorses the flood control and navigation improvements of the MR&T Project and necessary appropriations for completion.

ARKANSAS PROJECTS

APPROPRIATIONS RESOLUTIONS

RED RIVER WATERWAY PROJECT, SHREVEPORT, LOUISIANA TO INDEX, ARKANSAS

Completion of the Red River Waterway Comprehensive Bank Stabilization project to Index, Arkansas, will significantly boost the economy throughout the river basin and provide jobs in the area. Great economic benefit will accrue not only to that portion of the river wherein navigation is currently authorized, but also to the area between Shreveport, Louisiana, and Index, Arkansas, resulting from a comprehensive bank stabilization program. This type of program should not be denied citizens of the Red River Basin and the nation.

The Red River Valley Association urges the Congress to appropriate $520,000 for the continued planning of the reach of Red River from Shreveport, Louisiana, to Index, Arkansas. Adequate funding is required to result in comprehensive coordinated advancement of these basin-wide features which will allow construction to commence as soon as possible in the reach between Shreveport and Index. Planning on this upper level must be accomplished in order that construction can be completed for the navigable portion of the channel from the Mississippi River to Shreveport on a timely basis, as this project will complement the navigation channel so that maximum basin benefits can be provided simultaneously.

RESHAPING LEVEES

The Red River Valley Association recommends Congress provide funding of $500,000 initiate construction, or pre-construction planning if necessary, of the reshaping of the levees on the main stem of Red River in Arkansas to conform the levees to the new flow line established by a recent study of the Corps of Engineers.

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM

For the past several years no appropriations have been included for projects to be constructed under Red River Levees and Bank Stabilization Below Denison Dam, but it remains and authorized program to meet special needs. A special need exists for the replacement of a completely failed flood control gate and the levee contiguous to it in the McKinney Bayou Drainage Ditch in Miller Country, Arkansas. The gate was constructed to control high stages in McKinney Bayou caused by head-water flows and or back-water conditions caused by high stages on the Red River. Either of these conditions can cause serious flooding of valuable farm land above the failed flood control gate.

It is imperative that the failed flood control gate be replaced before flood stage again occurs on the Red River in that proximity or in the area drained by McKinney Bayou Drainage Ditch. The Red River Valley Association recommends that $800,000 be appropriated as a line item under Red River Levees and Bank Stabilization below Denison Dam for the design and construction of the replacement flood control gate that has totally failed and collapsed.

LOUISIANA PROJECTS

APPROPRIATION RESOLUTIONS

CYPRESS-BLACK BAYOU WATERSHED

Local interests and the state of Louisiana, in cooperation with the United States Department of Agriculture Soil Conservation Service, have advanced construction of this project to the point where many benefits are being realized. Features of the project include: land treatment measures, two multiple purpose reservoirs for irrigation, recreation and municipal water supply, a comprehensive recreational facility development, and approximately 55 miles of channel improvement for flood prevention and agricultural water management, and 11 weirs, two pumping plants and water control structures for distribution and irrigation use of water. The features of the watershed remaining to be constructed are channel improvements, weirs, pumping plants and water control structures. Through these features, the agricultural water needs of the central Bossier Parish, Louisiana, area can be met during most years. Additionally, some assistance is provided in meeting municipal and industrial water needs.

The Red River Valley Association expresses its sincere appreciation for Congressional support in funding the Cypress-Black Bayou Watershed development, and recommends that the financial support necessary for completion of the project be provided.

BAYOU BODCAU AND TRIBUTARIES

The Bayou Bodcau and Tributaries Project was authorized in 1965, with construction actually beginning nine years later in 1974. This project, as originally planned, provided for improvements to Cypress Bayou, Red Chute Bayou, Loggy Bayou, and Flat River with construction of levees, channel enlargement and drainage structures. Approximately 62 miles of levees and 12 miles of channel enlargement were proposed to be constructed.

The Bayou Bodcau and Tributaries Project has progressed to the point where the Corps of Engineers has constructed 15 miles of levees on the northern end of the project, ending immediately south of Bossier City, Louisiana, and local interests have constructed the 12 miles of channel improvements.

Since the project's authorization in 1965, land use changes have occurred within the project limits, especially south of Bossier City, Louisiana. Lands that were predominately agricultural are now being used for residential development. The Corps of Engineers has informed the local sponsor that some 5,000 acres of flood easements will have to be obtained south of Bossier City, some of which contain substantial residential development. These flood easements south of Bossier City were not included in the project as authorized.

Because of the new developments and land use changes, the Corps of Engineers has recommended that a comprehensive review of the remainder of the project be undertaken. The Red River Valley Association strongly urges the Corps of Engineers to expedite their review of the project, and to provide necessary modifications for the protection of all lands subject to flooding south of Bossier City, Louisiana.

The Red River Valley Association also urges that Congress continue to fund the Bayou Bodcau and Tributaries Project at a level necessary for project completion at the earliest possible time.

ATCHAFALAYA BASIN

The Atchafalaya Basin is a key element in the flood control plan for the Mississippi River and its Tributaries, that directly involve the Red River Basin area. Flood control is the primary purpose of the Atchafalaya Basin and its capability must be maintained and improved.

The Red River Valley Association opposes any plan for use of the Atchafalaya Basin which reduces its effectiveness for flood control. However, the Association does not oppose other uses of the basin, provided they do not interfere with or prevent its use for flood control purposes.

The Association urges that the studies being made on the Atchafalaya Basin area be completed as soon as possible, and construction of the necessary flood control works in the area be resumed immediately.

RED RIVER BACKWATER AREA

The 1941 Flood Control Act authorized protection of additional areas in the Red River Backwater Area, where justifiable. A review in the late 1950s concluded that additional flood protection works were justified and authorized for the Larto Lake to Jonesville area, the Sicily Island area, the Below Red River area, and the Tensas-Cocodrie area.

The Larto Lake to Jonesville area and the Tensas-Cocodrie area levee system have been constructed and the Tensas-Cocodrie Pumping Station is under construction. The Tensas-Cocodrie levees, however, are below grade and need to be enlarged. The Red River Valley Association requests that funds to allow continuation of this project be made available by Congress.

Advanced planning of the Below Red River Project is continuing and the recommended plan has been endorsed as the best levee plan by the U. S. Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries. The Red River Valley Association requests that Congress approve sufficient funds for the completion of advanced planning of the Below Red River Project.

A planning report for the Bushley Bayou Project has been completed. The Red River Valley Association requests Congress to provide funds for continuation of planning of this project.

Construction of these projects should be completed at the earliest possible time to provide the protection determined to be justified, authorized, and necessary by the U. S. Army Corps of Engineers.

ALOHA-RIGOLETTE PROJECT

This project, initially authorized in 1941 and constructed during the period 1948-54, provides for the protection of some 58,000 acres of alluvial land during high stages of the Red River. Drainage from 340,000 acres that must flow through protected areas during lower river stages is disposed of by gravity flow through two 10 ft. by 10 ft. gated concrete drainage structures in the levee at the lower end of the project. This protected area has continued to develop agriculturally since construction of the project and now additional gates are needed to allow adequate gravity drainage during low river stages. As a result, local interests have requested that additional studies be made of the project, paying particular attention to the adequacy of the floodgate which has now been determined to be significantly inadequate for current conditions.

A study completed by the New Orleans District of the Corps of Engineers is essentially completed, and a draft report of the study has been substantially completed lacking only additional cultural resource investigations. The Red River Valley Association urges that Congress appropriate the full capability of the Corps FY88 to continue planning and engineering on the project so that it can be advanced to the construction stage as soon as possible, that Congress authorize the additional construction recommended in the New Orleans District report dated June 1985, and that $6.9 million be appropriated for this construction.

LOWER RED RIVER SOUTH BANK LEVEE

The South Bank Levee is a feature of the Mississippi River and Tributaries Flood Control Project and calls for improvement of the existing levee from the community of Hot Wells, Louisiana, to Moncla, Louisiana. Construction procedures include: strengthening and enlarging substandard levee reaches, raising the levee to the designed grade, bank stabilization to protect the levee, and other miscellaneous levee and roadway improvements. This levee is of extreme importance since it protects 1.25 million acres of valuable lands and improvements from flooding. This work should be completed in a timely and orderly manner; therefore, the Red River Valley Association endorses an adequate appropriation by Congress for FY88.

EASTERN RAPIDES-SOUTH CENTRAL AVOYELLES DRAINAGE DISTRICT

After many years of delay, the Eastern Rapides-South Central Avoyelles Drainage Project was authorized as a feature of the Mississippi River and Tributaries Flood Control Project. Unfortunately, construction has not been started subsequent to the authorization of 1970.

This project encompasses the upper part of a drainage system that would directly and indirectly benefit parts of the parishes of Rapides, Avoyelles and Evangeline, where more than 206,000 acres of valuable agricultural land are subject to flooding. Flooding of this acreage occurs at least four times a year. This flooding is the result of Federal government authorized construction of the South Bank Red River Levee and the West Atchafalaya

Basin Protection Levee which intercepted the natural drainage channels. Additionally, one large urban community, Alexandria, Louisiana, has been adversely affected by the poor drainage conditions that drastically need improvement.

There is an urgent need to begin work on this extensive project, which would traverse southeasterly from Alexandria for some 80 miles before entering the Atchafalaya Basin Floodway. Many studies have been made, and public hearings have been held. However, it has come to our attention that after all of these studies and hearings, additional mitigation is now being required as a result of comments by the U.S. Fish and Wildlife Service, delaying completion of the final report.

The Red River Valley Association strongly recommends that the Corps of Engineers expedite their review of the project so that construction can begin as soon as possible.

LOWER RED RIVER LEVEES

The South Bank Levee in the Red River, Atchafalaya and Bayou Boeuf Levee District from Boyce, Louisiana, to Moncla, Louisiana, is a feature of the Mississippi River and its Tributaries Flood Control Project. A continuation of this same levee from Moncla to Lake Long, Louisiana, is under a different authorization, thereby denying the benefits of the MR&T authorization to the people and property in the protected area. The North Bank Levee of Red River, in the same levee district, does not benefit from the MR&T authorization, yet they also protect the lives of many people and vast areas of farm land and improvements.

Both the South Bank and the North Bank Levees of the Red River are part of a continuous protective system; the lower few miles from Moncla to Lake Long are a part of that system. The Red River Valley Association recommends that Congress authorize the Corps of Engineers to review the present authorization of these levee systems, with the view of including all portions in the same MR&T authorizations so as to provide equal benefits and protection to the people and property of the Red River Basin Area in Louisiana.

AUTHORIZATIONS AND/OR APPROPRIATIONS

BAYOU COCODRIE AND TRIBUTARIES

This project was authorized in 1941 and provides a drainage outfall for a large area of central Louisiana, including 120 miles of drainage channel, three water control structures, and a major drainage structure in the West Atchafalaya Basin Protection Levee. The upper 100 miles of the project extending from Rapides Island west of Alexandria, Rapides Parish, to the town of Washington, St. Landry Parish, is known as the Bayou Bouef-Cocodrie Diversion Channel. The lower 21 miles is Bayou Courtableau.

LOUISIANA PROJECTS (Continued)

Most of the project was completed in 1952. Since that time, as a result of extensive developments throughout this intercepted drainage area, stages in the main channel system have continued to rise and have exceeded the design water surface by several feet on a number of occasions. Under present conditions, widespread flooding of agricultural lands and extensive damages from flooding of residential areas occur and continues increasing with each passing year. There is a critical need for improvement to these drainage channels which are intercepted by construction of the Red River South Bank and West Atchafalaya Floodway Levees.

For the lower part of the project (Bayou Courtableau), advanced engineering and design were considered to be completed in 1980. It now appears that additional studies of this portion of the project are necessary. These additional studies will continue to delay construction of several P.L. 566 projects for drainage improvements in this area which have not been allowed to proceed because of inadequate outlet through Bayou Courtableau. For the upper part of the project, Bayou Boeuf-Cocodrie Diversion Channel, the system is under a continuing re-study to determine improvements that need to be accomplished in the system.

The Red River Valley Association urges that these additional studies be promptly completed so that construction of this outlet can begin.

BAYOU RAPIDES PUMPING STATION

The Bayou Rapides pumping plant was constructed in 1930-31 by the state of Louisiana and the Red River, Atchafalaya and Bayou Boeuf Levee District with a pumping capacity of 100,000 gallons per minute. Located beneath the pumping station are six reinforced concrete gated openings to provide drainage by gravity when Red River stages permit. During high river stages, the floodgates must remain closed.

The present pumping capacity should be increased eleven times to 1,100,000 gallons per minute which is necessary to provide reasonable protection against flooding for a 25-year storm frequency. The pumping station is a necessary integral major structure incorporated into a complicated drainage system for the City of Alexandria, Louisiana, and connects to the Bayou Rapides-Bayou Cocodrie Drainage systems, and the Red River.

As a major structural feature providing for intercepted drainage resulting from Federal levee construction, it is clearly established that replacement of this pumping station with an adequate capacity is a responsibility of the Federal government.

The Red River Valley Association strongly urges the Corps of Engineers to expand the existing Bayou Cocodrie and Tributaries study and include the Bayou Rapides Pumping Station as a feature of the overall interconnected drainage system, with a view to authorization and construction of adequate pumping and/or drainage facilities. Further, if such addition to the existing study results in drastic delay and/or funding impacts, the Red River Valley Association recommends separate Congressional authorization for this urgently needed study.

RED RIVER MASTER PLAN FOR RECREATION

Recognizing that recreation is an integral component of the Red River Waterway Project, the Association supports the development of recreational facilities as a part of the overall project construction. A Master Plan for Recreation has been cooperatively developed by the Red River Waterway Commission of Louisiana and the Corps of Engineers. The Red River Valley Association urges construction of the recreational facilities in accordance with the Master Plan.

RED RIVER HYDROPOWER

The Red River Waterway Commission in Louisiana recently received authorization from the Louisiana Legislature to develop hydropower on the Red River Waterway in Louisiana, and has been working closely with the U. S. Army, Corps of Engineers, and the Southwestern Power Administration, U. S. Department of Energy, to conduct a feasibility study for hydro-electric power development on the locks and dams on the Red River Waterway Project.

The Red River Waterway Commission of Louisiana has indicated that it is prepared to provide 100 percent of the construction costs of the hydro-electric power facilities after the project is authorized by Congress and prior to the start of construction if satisfactory contractual arrangements for the disposition and repayment of the funds can be made. Additionally, the Commission has recently written to the U. S. Army, Corps of Engineers, requesting that they expedite completion of its hydropower feasibility study.

In view of this strong local support, the Red River Valley Association requests the U. S. Army, Corps of Engineers, to expedite completion of the study and requests Congress to provide adequate funding for that purpose in FY88.

OKLAHOMA PROJECTS

APPROPRIATION RESOLUTIONS

LUKFATA PROJECT

Lukfata Lake on Glover Creek in central McCurtain County in southeastern Oklahoma was authorized by the Flood Control Act of 1958 as a component of the seven-reservoir system for flood control in the Little River Basin. All of the reservoirs except Lukfata Lake have been completed; without the Lukfata project, the system does not function as planned.

In the Energy and Water Development Appropriations Bill of 1982, HR97-177, 14 July 1981, the Committee on Appropriations directed the Corps, within the limits of available funds, to study the potential of hydropower generation [illegible] Lukfata Lake. A preliminary study was completed in May 1983. The study showed that a 65 mega-watt hydropower plant could be developed as a part of the project at the lower site. Consultations between the U. S. Fish and Wildlife Service and the Tulsa District Corps of Engineers have resulted in an opinion by the USFWS that the proposed project would adversely affect an endangered species, the leopard darter, and its habitat, and threaten its continued existence. After reviewing the opinion, Tulsa District is considering a request for exemption from the Endangered Species Act. However, additional studies need to be accomplished to obtain information that could be an important element in designing a workable mitigation plan for inclusion in the exemption request. Those studies will be completed as part of the Red River Basin Comprehensive Study. The Red River Valley Association supports continued studies of the Lukfata project by the Corps of Engineers at 100% Federal costs in order to resolve conflicts between endangered species and development of the project.

McGEE CREEK

McGee Creek Lake was authorized for construction, operation, and maintenance in accordance with Federal Reclamation Laws by P.L. 94-123, September 28, 1976. McGee Creek Lake is located in Atoka County in southeastern Oklahoma. McGee Creek is a northern tributary of the Red River. The damsite is about 3.4 miles above the confluence of McGee and Muddy Boggy Creeks. The project was authorized for water supply, flood control, and recreation. Construction began on the project in June 1982.

The Red River Valley Association strongly supports continuation of this project, and the concept demonstrated in the project of maximum development of the local economy by maximum utilization of opportunities provided by the project's development. The Association recommends the members of the McGee Creek Authority to continue to cooperate with the basin interests to fully develop the economic potential of this project for the benefit of the project area and the nation. The Red River Valley Association requests that $8.5 million be provided to continue this project, including all roads associated with the project.

AUTHORIZATION AND APPROPRIATION RESOLUTIONS

PARKER LAKE

Parker Lake on Muddy Boggy Creek is an early action project recommended in the Red River Below Denison Dam Comprehensive Basin Study. The project would provide protection against the standard project flood and a dependable water supply of 42 million gallons per day for municipal and industrial facilities.

Congress authorized construction of Parker Lake in the FY85 supplemental appropriations bill (P.L. 99-88, 15 August 1985) contingent upon the execution of a local cost sharing agreement with a non-Federal entity. In September 1985, the Oklahoma Water Resources Board provided a draft letter of assurance for cost sharing on Parker Lake. Since that time, the Office of Management and Budget and Assistant Secretary of the Army (Civil Works) have stated that, based on the percentage of flood control provided, Parker Lake was a single-purpose project and there was no federal interest in construction.

The Red River Valley Association believes the congressional intent for federal construction of the Parker Reservoir Project was reaffirmed by its subsequent inclusion in the Water Resources Development Act of 1986, Title VI, Water Resources Conservation and Development. In light of such, we recommend that the Administration direct the Army to resume cost sharing negotiations with appropriate non-federal entities.

BUREAU OF RECLAMATION

Congressional authorization and funding (P.L. 98-360, July 16, 1984) was established for the Bureau of Reclamation to conduct the following studies in the Red River Basin: Southeast Oklahoma Water Supply Study, East Central Oklahoma Water Supply Study, and Kiamichi Hydropower Study. These studies are scheduled for completion in September 1988.

The Red River Valley Association understands that the $250,000 for the East Central Water Supply Study and the $100,000 for the Kiamichi Hydropower Study which was appropriated in the FY87 Appropriations Bill has been been apportioned to the Bureau by OMB. It is also the Association's understanding that funds to complete the Southeast and East Central Oklahoma Studies have not been included in the FY88 budget. It appears to the Association that funds included in the FY88 budget are not sufficient for the Bureau to maintain a planning staff and will impact on the capability to complete commitments directed by the FY87 Appropriations Bill.

The Red River Valley Association requests that Congress direct the release of funds appropriated in FY87 and provide sufficient funds for the Bureau to complete these studies in FY88 as per the original authorization.

TEXAS PROJECTS

APPROPRIATION RESOLUTIONS

CYPRESS BASIN

A feasibility study of the Cypress Basin to include an investigation of the proposed Lake Marshall was authorized and funded by Resolution of the Committee of Public Works and Transportation in May 1979. The study has been completed and is awaiting review by Southwestern Division of the Corps of Engineers. The Red River Valley Association supports full development of the basin as set forth in the Red River Compact.

COOPER LAKE AND CHANNELS

The Cooper Lake and Channels Project was authorized by the 84th Congress on August 3, 1955, for the construction, control, recreation and water supply benefits to the citizens of this nation. The Corps of Engineers and three local entities, Sulphur River Municipal Water Districts, North Texas Municipal Water District and the City of Irving, have been attempting to build this project since its authorization. The project has been delayed since 1978 by litigation to modify the Environmental Impact Statement. That litigation has now been resolved.

The Corps of Engineers has made what it considers to be the required modifications on the Cooper Lake Project, which is desperately needed by the local participants for water supply, and by the City of Texarkana for replacement flood control storage in Lake Wright Patman. The Red River Valley Association recommends that the Congress fund the project in the amount of $14 million in FY88, and that all recreations facilities be constructed at Federal cost.

AUTHORIZATION RESOLUTIONS

RED RIVER ABOVE DENISON-CROWELL SITE

A more detailed feasibility report must be prepared on the proposed Crowell Site on the main stem of the Pease River to take into account more realistic values of all benefits. This investigation should be started at once since this portion of the Red River Basin is particularly short of usable water for municipal, industrial and agricultural uses. Additionally, this reservoir would be very valuable as a flood control project.

Within a few years, with the control of natural pollution as proposed by the Corps of Engineers Ark-Red Chloride Control Program, this water can be used for irrigation purposes and other purposes mentioned above, and it is now time that the necessary report and feasibility study on this proposed site be started.

This proposed project has been endorsed and is supported by Wilbarger, Foard, Hardeman, Cottle and Childress Counties, and the Soil Conservation

District serving these counties and the Cities of Vernon, Quanah, Childress, Crowell and Paducah, as well as the Four Winds Foundation, consisting of Childress, Cottle, Hardeman and Foard Counties, and the Four Winds RD&D, and many farm and civic organizations.

The Red River Valley Association supports the Pease River Reservoir Steering Committee in its request, and recommends the Corps of Engineers to expedite its efforts to develop a plan of improvement for the area.

TEXOMA DIVERSON PROJECT

The North Texas Municipal Water District and the Greater Texoma Utility Authority have developed a program to use a small portion of Lake Texoma for municipal water supply. The Red River Valley Association has continually supported the beneficial use of Lake Texoma for the people in the four state area, and believe the Texoma Diversion project will be of great benefit in that it will: (1) provide much needed drinking water for many people living within the State of Texas, and (2) encourage economic development of the river basin and adjacent basins. Adding to its attractiveness is the fact that the project is environmentally sound and economically beneficial to the area and the nation. The Red River Valley Association therefore finds the project to be beneficial and encourages the Tulsa District of the Corps of Engineers allow for the immediate construction of the Texoma Diversion Project of the North Texas Municipal Water District and the Greater Texoma Utility Authority. The Association further believes that this type of project will encourage the timely completion for the Red River Chloride Control Project and further illustrate the benefits of the project.

FEDERAL LEGISLATION AND POLICIES

NON-FEDERAL COST SHARING

The Water Resources Omnibus Bill was signed into law by President Reagan on November 17, 1986. Non-federal cost share provisions set forth in this important piece of legislation include:

- Flood Control — 25-50%, with a minimum of 5% cash up-front during construction.
- Hydropower — 100% reimbursable.
- M & I Water Supply — 100% up-front during construction or reimbursable with interest.
- Agriculture — 35% up-front or reimbursable.
- Recreation — 50% up-front or reimbursable.
- Fish and Wildlife Enhancement — 0% for national benefits; 25% up-front or reimbursable if benefits are local.

  Feasibility Level Studies — 50% during the course of the study, with a minimum of 25% in cash — up to 25% may be provided in-kind. (Excludes inland navigation studies involving dams, locks and channels.)

Even though these and other cost-sharing provisions are generally outlined in the Omnibus Bill, there still remains substantial leeway for interpretation and formulation of guidelines. The Red River Valley Association highly recommends that the federal government solicit state and local input towards implementation of equitable and realistic cost-sharing guidelines.

NATIONAL ENVIRONMENTAL POLICY ACT

While recognizing the need and intent of the Congress in passing the National Environmental Policy Act of 1969, the Red River Valley Association also believes that the interpretation of this act has caused unnecessary economic hardship to the general public. The delay in start of projects beneficial to the general goodwill causes the real cost of the projects to increase significantly, often to the point that they no longer are economically beneficial.

The Red River Valley Association requests Congress to revise this Act to:

1 Streamline Administration procedures under the Act to speed up the time for completion and review of an Environmental Impact Statement in a Federal project.

2. Recognize Man as a part of the environment and require that the effects upon Man be taken into account in the preparation and analysis of an Environmental Impact Statement.

3. Require that any person, association or other entity contesting the

adequacy of the Administration procedures in preparation and/or review of Environmental Impact Statements be required to post bond in evidence of financial responsibility to reimburse the constructing agency for cost of delay in the event that the Environmental Impact Statement and/or procedure appealed is found to be adequate, if not otherwise provided by existing law.

The membership of the Red River Valley Association is concerned about unwarranted delays that add additional costs to Red River Basin projects resulting in severe hardships on the citizens of the Red River Basin. The membership urges that Congress direct public officials and agencies to proceed with sound long-range development of the Red River Basin and its resources for the benefit of Arkansas, Louisiana, Oklahoma and Texas.

RIGHTS-OF-WAY RESPONSIBILITIES

The Flood Control Act of 1946 provided for enlargement of existing levees and construction of certain authorized levees on Red River below Denison Dam. Language in the Act requires local interests to be responsible for all lands, easements and/or rights-of-way required for construction of the improvements. Levee districts and local governing bodies have found that the number of enlargements, setbacks and berms have progressively increased and rights-of-way costs have sharply increased, particularly in the past 10 years. Financial burdens resulting from increased costs for rights-of-way have steadily depleted limited revenues and funds of levee districts and local public bodies throughout the Basin area. The impact is so great that presently there are serious monetary problems and realistic doubt as to the abilities of various levee districts to continue to meet financial obligations.

The requirement of local interest to furnish all rights-of-way is not consistent with Congressional policy and is not compatible with other major river basin projects for flood control. It is obvious that modifications are drastically needed to correct these inadequacies.

The Red River Valley Association recommends Congress amend the 1946 Flood Control Act to permit Federal reimbusements to levee district and local governing bodies for fair market value of lands taken for all flood control purposes, including construction of new levees, levee setbacks, levee enlargement, levee turnovers, berms and cutoffs as necessary. Such modification is required at an early time to help relieve local levee districts and governing bodies of an extreme financial burden, and to assure progressive advancement of the flood control program in the Basin.

UNIFORM RELOCATION ASSISTANCE ACT

The Levee Districts in the Red River Basin and the Red River Waterway Commission are experiencing increasing costs in the construction of navigation systems and construction and operation of flood control systems. The tax base of the basin lands is not capable of supporting additional tax loads to fund the relocation costs associated with levee setbacks, flood control works and navigation projects.

FEDERAL LEGISLATION AND POLICY RESOLUTIONS (Continued)

The Federal Government through Public Law 91-646, known as the Uniform Relocation Assistance Act, provides that these relocation costs are the responsibility of and must be borne by local interests. The requirements and guidelines established in this Act are such as to be extremely costly.

The Red River Valley Association requests the Congress to amend the Federal Uniform Relocation Assistance Act to provide for Federal payment of all such costs related to the construction of flood control and navigation projects in the Red River Basin of Arkansas, Louisiana, Oklahoma and Texas.

MAINTENANCE OF CHANNEL STABILIZATION WORKS

Past experience on the Red River and many other river projects has shown conclusively that maintenance of channel stabilization works by local interests is impractical. Rapid changes in river conditions and alignment, such as occur frequently on Red River, demand drastic extensions and revisions of existing protective works, and, occasionally, required changes are so radical that relocations are necessary. Experienced personnel, special equipment and certain materials are not normally available from local interests when needed, and the costs of these items exceed the financial capabilities of local levee districts.

The Red River Valley Association recommends to Congress that the Corps of Engineers be authorized and directed to maintain all bank stabilization and channel training work on the Red River.

RED RIVER BASIN BENEFICIAL USES OF SALT WATER

On September 23, 1982, the U. S. House of Representatives Committee on Public Works and Transportation adopted a resolution directing the Corps of Engineers to determine the feasibility of salt gradient solar ponds and associated power generation equipment to collect and store solar energy and to generate electric power in the Red River Basin.

The inherent thermal storage capability of salt gradient solar ponds and the associated solar pond power plant concept offers a potentially viable alternative energy source which makes use of abundantly available natural resources (sun, salt and land) and existing technology (i.e., heat exchangers and low temperature turbine generators). The necessary resources are readily available in the Red River Basin, particularly in western Texas and Oklahoma where there are identified sources of salt brine in economical quantities feasible for use in conjunction with solar ponds.

Limited scope reconnaissance studies performed in FY84 by the Tulsa District of the Corps of Engineers indicate a strong likelihood that a system of solar pond power plants can be economically feasible when constructed in conjunction with the chloride control measures in the Red River Basin. The report recommends expanded reconnaissance studies be made in the basin.

The Red River Valley Association supports the investigation and requests that the stated FY88 capability level of the Corps of Engineers be appropriated at 100% Federal cost to continue these studies.

HYDRO-ELECTRIC POWER DEVELOPMENT

When Red River Basin projects were initially authorized, the need for alternate energy sources was not deemed of paramount importance to the welfare of the nation, and, therefore, hydro-electric power generation was not incorporated as a feature in any of the authorized projects.

Since the mid-1970s the energy situation has changed drastically, forcing the nation to begin investigating methods of developing and utilizing alternate energy sources such as hydro-electric power. In keeping with this important trend, the Corps of Engineers has been authorized to conduct feasibility studies for hydro-electric power development on the locks and dams of the Red River Navigation Project, as well as other projects in the Red River Basin.

The Red River Valley Association strongly urges continued funding for these feasibility studies to ensure that optimum power generation can be achieved through these projects while, at the same time, insuring that the water supply needs of the communities affected by these projects continue to receive priority emphasis.

FEDERAL PROCEDURES FOR A PROJECT STUDY

Current procedures require the Corps of Engineers to hold three or more public hearings for all studies authorized by Congress. The initial public hearing held at the beginning of the study provide the proponents and opponents of the proposed project ample opportunity to express their desires and needs. Prior to submission of the completed study to higher authority for review, a final public hearing is required. Additional interim public meetings are held to obtain recommendations of the local interests. These additional interim hearings result in an overall project delay, increased study costs and, being repetitious, do not advance the project in any way. Former procedures used by the Corps of Engineers requiring the Division Engineer to issue a Notice of Survey Report to all interested parties effectively accomplished the overall purpose of the second public hearing. The Red River Valley Association is opposed to the project study procedure requiring the additional hearing, and recommends that the former procedure be re-established.

CHANGES DURING A FEDERAL STUDY

During the phase of completing the General Design Memorandum for an authorized project, local interests, levee boards and the state governmental offices of primary interest should be kept advised of the study progress. In particular, any changes of the originally authorized plan as it may affect the project and/or the purpose of the project should be communicated to the local and state governments.

EMPLOYMENT OF LOCAL PEOPLE

A significant advantage of construction projects by the Corps of Engineers is the employment of local people, benefiting the unemployed and providing higher employment of the under-employed within the project area. Corps of Engineers policies allow that construction contracts be written to require that up to 80 percent of the labor force involved be local labor. Even so, a great majority of the labor force employed by private contractors on the Red River Waterway projects come from out of state. According to the Red River Valley Area Council, there are qualified and skilled construction workers in the Red River Valley who could perform the work required.

The Red River Valley Association urges the Corps of Engineers and Congress to do all within their power and within the law to enforce and encourage the employment of as many people as possible from the surrounding local communities in the construction of the Federal projects along the Red River Waterway.

COST OF STORAGE FOR MUNICIPAL AND INDUSTRIAL WATER

Federal laws under which the multi-purpose Federal water projects were authorized, require purchases of any water supply or power to repay the Federal Government the full cost of providing such power or water, including interest on that cost at a rate the government paid to borrow long-term money in the year it built the project. This specific pricing mandate was established by the Water Supply Act of 1958.

Since 1976, the Secretary of Army has required construction costs escalated to present day levels by use of the Engineering News Record Construction Index effective at the beginning of the fiscal year in which the contract is approved plus interest.

The Red River Valley Association requests Congress clarify the Secretary of Army's authority regarding water storage contracts and supports the concept of repayment to the Federal Government of original cost of construction plus interest only.

REGULATING LAND USE

In the past, proposals have been offered in the U. S. Congress and in some state legislatures to regulate and control the use of privately owned lands without compensation to the owner. These "land use" bills have been recognized by these legislative branches of government as contrary to the Fifth Amendment of the Constitution of the United States and soundly defeated each time they were offered. The Red River Valley Association opposes this type of national land use legislation.

MITIGATION LANDS

The present interpretation held by the U. S. Fish and Wildlife Service in relation to "mitigation lands" for water conservation projects greatly hinders the development of water supplies, flood control and bank stabilization projects. This interpretation requires taking large amounts of lands out of private

This interpretation requires taking large amounts of lands out of private ownership for wildlife management purposes. This reduction in private land ownership represents a considerable economic and tax base loss. The Red River Valley Association, recognizing the need for a balance between the environmental aspects and people's needs, requests Congress to press for a revision of the present interpretation held by the U. S. Fish and Wildlife Service in order to make it compatible with Congressional intent and the needs of the people.

The Fish and Wildlife Service has undertaken efforts to utilize various alternative action programs such as fee acquisition, leasing, and easements for the purpose of a program to preserve bottom land habitats.

As part of this program, the Fish and Wildlife Service has identified specific bottom land hardwood areas in Texas and Oklahoma and has placed these areas into priority categories, with many of the areas so indentified in direct conflict with identified and proposed water supply reservoir sites.

The Fish and Wildlife Service's Program could have serious adverse effects on the ability of water supply agencies to meet the future water needs of the people within their respective regional water supply areas, in that the program sets a dangerous precedent that will permit anti-water development groups to use such tactics to preempt, or at least make very difficult, future water development projects. The Red River Valley Association, therefore, opposes the Fish and Wildlife Services' Bottom Land Hardwood Preservation Program.

SMALL WATERSHED PROGRAM

The Red River Valley Association has long recognized the value of the Small Watershed Program (Public Law 566) for protecting and improving the soil and water resources of our nation. Resource improvement projects in small watersheds of less than 250,000 acres, as provided in Public Law 566, gives rural and small town America an effective tool to span the gap between large watershed resources improvement projects of the Corps of Engineers and small, individual projects, carried out by landowners and operators. Public Law 566 has become a well-known and respected program of federal, state and local partnership in resource improvement and protection of the Red River Valley. The Red River Valley Association supports the Small Watershed Program and urges its effectiveness be increased through appropriate increases in funding and personnel.

FEDERAL RESERVOIRS POLICY

Federal reservoirs represent a combination of large economic investments and commitments of valuable natural resources which can make great contributions to the nation's economy. The Water Supply Act of 1958 provides a policy for non-Federal payment of water supply costs at federal reservoirs, both for participants at the time of project construction and for those who purchase reallocated storage at a later time. The payment required has been based on a simple principle: new water supply participants should pay for reallocated water

FEDERAL LEGISLATION AND POLICY RESOLUTIONS

supplies what they would have paid if they had been water supply participants when the project was built. This historic policy has achieved two goals: it has prevented "free riders" from receiving water supply benefits that they did not pay for, and it has facilitated reallocation of water to purposes with higher economic benefits.

In recent years, the Federal government has developed a new policy for payment of reallocated water supplies, charging the highest of the following: benefits or revenues foregone, replacement costs, or updated cost of storage in the Federal project. Under this new policy, the federal government has in several cases sought repayment of "updated costs" of storage among the new mix of project purposes. Non-Federal participants are asked to pay an inflated cost, increased to reflect present cost levels instead of original cost of construction, plus interest at the rate in effect at the time of reallocation, as opposed to the interest rate at the time of the project's construction. This new federal policy has been established by agency initiatives, rather than by Congressional action, and has not been applied consistently across the nation.

The Red River Valley Association requests Congress to enact legislation making it clear that the water supply repayment policy in the Water Supply Act of 1958 applies to reallocated water supply storage. The Red River Valley Association also requests that Congress further stipulate that in considering reallocation of storage space at federal reservoirs, federal agencies should strictly respect state water law and state water management responsibilities, and in all studies and decisions related to reallocation, federal agencies should be required to consult with all affected states and follow applicable state laws on water rights and water quality.

RED RIVER WATERWAY PROJECT, LOUISIANA AND ARKANSAS

COMMITMENT TO PROJECT COMPLETION

Senator JOHNSTON. Wait a minute; don't leave just yet. That is what you call a very strong group. First of all, I want to say to our friends from Arkansas and Oklahoma, first, thanks for coming. It is always a pleasure to be with you. We see you at the Red River Valley Association convention most every year and see you up here, and I want to say that what I have said through the years, and that is that we are committed to going on all the way to Index, Ark. It is still true, and it will be true until the time we get to Index, Ark. That is a commitment to me and this association. We are going all the way.

Second, let me say I am very familiar, of course, with the chloride control work. I am committed to those, and we will do them as best we can within the context of our budget problems.

Finally, let me say with regard to the Red River Waterway project. We need apologize to no one, not the Assistant Secretary of the Army, not the budget balancers, not anybody for this project.

To the contrary, the faster we can get that project completed, the better it is in the national interest. I am not talking about just our local Red River Valley interests, because that interest is very clear.

We have almost 15-percent unemployment and so our local interest is very, very clear. But beyond that, this same Corps of Engineers that at times somebody said they dragged their feet a little bit, they have identified annual benefits of $132 million upon completion of navigation on the Red River Valley.

We don't get that $132 million per year every year until we complete the entire project. Because you have to have the system in place before you begin to get the benefits.

Just have people out there moving dirt around doesn't get you any of those benefits. You have to complete it. We are virtually halfway complete now, not quite—but we have all this sunk cost. So the faster we can go ahead and complete the second half, then the entire country gets benefits.

When we talk about benefits, the Corps of Engineers computes the benefit-cost ratio and local benefits are not included. I mean, if you get 15,000 local jobs, that doesn't get included in the benefit calculation. It is only what national benefits you can identify. So that $132 million is just national benefits.

That is why when I say we ought to get a predictable level funding basis, $100 million a year is a good, round figure to work with that represents very little increase over what we were doing, but the difficulty is they haven't been doing it in an efficient way.

The Corps has been required to proceed in a sequential fashion, waiting to finish one lock and dam before they start the design of another lock and dam, and that makes no sense. We need to maximize our efforts; we need to assume a level funding level as we had asked the Corps to do, and then tell us what is the optimum way to do it.

If you, Mr. Corps of Engineers, know you are going to have *x* amount of funding, what would be the optimum way to proceed? And they have told us in testimony right here at this very table, before this very committee that, in fact, they tend not only to go faster, but they can save a lot of money for the country by having a level rate of funding.

The benefit-cost ratio for the remaining projects is 2 to 1. I have heard it said, "Well, yes, but that is using 3¼ percent interest." Those who say that they don't have the foggiest notion how benefit-cost ratios are calculated. For those of you who don't know, let me tell you that benefit-cost ratio is made up of an allocation of benefits on one side and costs on the other, and you compare the two.

The difference is that with respect to costs, they put those in at the actual out-of-pocket figure, and then they apply inflation factors to that.

With respect to benefits, they take those benefits as of the date of completion and assume that there is no inflation. For example, you assume so much fuel is saved, but they take the cost of that fuel as of the time you finish your project and assume it is never going to rise.

If anybody thinks that gasoline is going to stay at, what, between 80 cents and $1 a gallon, depending on where you are in the country—it is close to $1 a gallon up here—or that No. 2 fuel oil is going to continue to stay at less than $1 a gallon, you have got to be smoking something to believe that.

We know that is not going to be so. But that is the way the Corps computes this benefit-cost ratio. But that made sense when they originally designed the mechanism for the benefit-cost ratio, because they had it, I think it was, at 2¼ percent initially, which was what they call the real interest rate, the difference between what real interest rate is the actual rate is inflation. In other words, the real cost of money. That is where the 2¼ percent came from.

Why they went to 3¼ I don't know, but they did, and that is not unreasonable. But experts at the Corps came in here and said, "Well, you ought to be using whatever interest rates the bank is charging." Well, it is clear they just don't understand how benefit-cost ratio is put together. Because 3¼ interest actually represents fudging on the cost side rather than on the benefit side.

We went through this the other day at the hearing with the Corps of Engineers. Even some of the engineers were not really aware of the way that that is done, because they designed this thing way back in antiquity somewhere and never discuss how it is done. But that is how it is actually done.

When we say 2-to-1 benefit-cost ratio, that means two benefits for the country—for the country, not just for the valley, for every one in cost, and it means those are real figures.

In fact, they are fudged a little bit on the cost side rather than on the benefit side. So, I reiterate to you we are going to do our best to get an optimum funding level, which I think should be around $100 million; get assurance of that, put lock and dam No. 3 under contract, a long-term contract; get on with the concurrent design of 4 and 5, and tell your friends up there a mile from river mile 294 to get ready to ship that cargo, that it is going to be coming very soon.

Mr. DUGGAN. Great.

Senator JOHNSTON. The one thing I really am anxious to see and that is that when we start filling that pool up to Alexandria.

Navigation on the Red River has been a distant dream for a lot of people. They have heard it all that time and they are for it, but wait until we start filling that Pool No. 5 so that people driving down Highway No. 1 will look over there and see, first of all, water bank-to-bank in the Red River. You know, you had to have a pretty big imagination to look at the Red River to see sufficient water for navigation and find much beauty with the river. But wait until it is bank to bank and clear water, paddle boats going up and down there and barges going up and down there.

You are going to see some excitement up and down that valley, because everybody from Index, Ark., all the way down are going to drive down to see it. It is really going to be a source of excitement.

The development potential for the Red River Valley is good; it is good for Index; it is good for Shreveport; it is good for Bossier; good for Pashada; good for everyplace up and down that river, and it is also good for the country.

So we are going to do it just as fast as we can. I want to thank you, Don, for coming and Cousin Joe, and I agree with what you say about Don Jones, there. He is seasoned to do whatever he wants to do at any time, and our friends from Arkansas, Oklahoma, and Texas, we want to welcome you back and help us celebrate when we get ready to christen the first barge that goes all the way. I want to complete the navigation project from Index to the Old River Structure.

Thank you very much. Thank you.

Senator Stennis?

Chairman STENNIS. No; nothing further. I am certainly glad I got to hear this group, though.

[A brief recess was taken.]

GULF INTRACOASTAL CANAL

STATEMENT OF VERNON BEHRHORST, PRESIDENT, GULF INTRACOASTAL CANAL ASSOCIATION

ACCOMPANIED BY:

DALE MILLER, CHAIRMAN OF THE BOARD, GULF INTRACOASTAL CANAL ASSOCIATION

HERBERT HAAR, DEPUTY EXECUTIVE PORT DIRECTOR, PORT OF NEW ORLEANS

Senator JOHNSTON. The hearing will come to order. We are very pleased next to welcome the Gulf Intercoastal Canal Association with Vernon Behrhorst and Dale Miller.

Mr. BEHRHORST. Thank you, Mr. Chairman. I also have with me today the vice chairman of our board of directors, Col. Herbert Harr, who will be with you later on.

Senator, if I can make my statement just a little bit out of context before Homer Tanner gets out here, to remind him of where we have a port in Alexandria before the end of the year, he can shape his state down there.

I will mention I was a principal investigator on a study conducted on the city of Alexandria. This was a study on the public port, not any private firm, of 1 million tons of cargo to move through that port. The study certainly showed it to be a very feasible operation for the city of Alexandria.

So when we do get it there, we will have a facility to move cargo. I think that will supplement what he said.

Senator JOHNSTON. Do you think that will be in place at that time?

Mr. BEHRHORST. Sir?

Senator JOHNSTON. Do you think that will be in place in time?

Mr. BEHRHORST. They are working on it right now, toward getting facilities in there.

We are here today to testify in support of appropriations in the amount of $16,231,000 for operation and maintenance of the Gulf Intracoastal Waterway, as well as $625,000 for the continuing studies to improvements on the Gulf Intracoastal Waterway.

I think when we get those improvements, we will be back to work with you to get appropriations for those improvements in a couple of years. They also are supporting complimentary projects along the gulf coast from Florida to Texas which connect with the Gulf Intracoastal Waterway.

Just to give you an idea of the magnitude very quickly, last year I was in Central America studying ports down there. Reflecting back upon this, the Gulf Intracoastal Waterway carried 102 million tons last year. That is a 10-percent increase over the previous year. That is 10 times more tonnage from that carried in the whole of Central America, so it is significantly large tonnage, too.

I think it is significant in respect to that area, because the stability of that area and our economic security depends upon waterways to carry on a trade with those countries. I just want to make one point here on the importance of this waterway, the importance of the waterways in the whole South and the Southeast. With the completion of the Tenn-Tom Waterway, we now have a water network.

The Gulf Intracoastal Waterway connects the northern part. We have the Mississippi, the Tenn-Tom, the Ohio, Tennessee system, and the Red River, so this will be the first time we have a waterway network in the United States, and this will develop more and more commerce. As you said, in time, these things will develop.

This is an incentive. We have, of course, improvements on the Red River which will come up. Oliver lock and dam will be dedicated next month. That is another example of what is going on to improve this network here.

So, as well, many coastal ports and channels which were authorized in Public Law 99–662. I have one specific project in 662 to bring to your attention. It is being funded now. That is the study for replacement of the industrial canal lock. It is the most significant project as far as the introcoastal waterway.

It creates bottleneck as well as movement on the intracoastal waterway. It has to be resolved to the benefit, to the liking, in cooperation with both deep draft and shallow draft water carriers. It is being funded now, and I bring this to your attention that you make sure that we can receive continued funding to complete this study as quickly as possible so we can get on with the work of replacing this bottleneck on the Gulf Intracoastal Waterway.

These are the major things. I bring these to your attention to emphasize the importance of the Intracoastal Waterway in forming this waterway's network which we now have developed in the United States. I wish to take this opportunity to thank you for the opportunity to appear before you on behalf of the Gulf Intracoastal Canal Association.

Dale Miller, past president and current chair has one more brief statement to add to this.

[The statement follows:]

STATEMENT OF VERNON BEHRHORST, PRESIDENT, GULF INTRACOASTAL CANAL ASSOCIATION

Mr. Chairman and Members of the Subcommittee:

My name is Vernon Behrhorst. Today I appear before you for the first time as President and Chairman of the Executive Committee of the Gulf Intracoastal Canal Association. Accompanying me is Mr. Dale Miller, Chairman of the Board of our Association, and former President of GICA.

We appear before you today in support of appropriations for the Corps of Engineers to continue operation and maintenance of the Gulf Intracoastal Waterway (GIWW) to authorized dimensions in the amount of $16,231,000 and for completing studies which the Corps has underway on improvements to the GIWW in the amount of $625,000.

We also support appropriations for construction, operation and maintenance of both deep-draft and shallow-draft ports and waterways which connect with and compliment the GIWW along the Gulf Coast from Florida to the Rio Grand.

This past week I was in Central America discussing ports and waterways improvements with government officials and U.S. agencies in that region. While approaching New Orleans on the return trip we flew over the GIWW where it intersects Bayou Lafourche. I counted five tows on the GIWW in the short reach of the waterway I could see. This attests to the great amount of traffic this vital waterway carries. In 1985, the GIWW carried 102,000,000 tons of commerce, a significant increase of 10% over 1984. By comparison, the total tonnage of imports and exports in all the Central American countries is less than ten million tons, one-tenth of that of the GIWW.

I call this to your attention for several reasons. First, to stress the importance of the GIWW itself as a major carrier of commerce. Secondly, I mention it because of the important contribution the GIWW and connecting waterways make, and will continue to make, to commerce with this important regions of the world whose economic stability is so vital to the economy and security of the United States. Up to one-third of the commerce entering and leaving our deep-draft ports along the Gulf enters or leaves these ports via the GIWW, depending upon the port.

Also, at the Ports and Waterways Institute of the Louisiana State University where I serve as Assistant Director, we are conducting a study for the U.S. Maritime Administration on the use of shallow-draft self propelled vessels and ocean going barges in coastal and foreign commerce, particularly with Central America and Caribbean countries. This technology can contribute to greater direct trade between ports on the GIWW and inland waterways and shallow-draft ports in our neighboring nations to the south. Commerce between these neighbors and the United States will be enhanced to the benefit of all nations involved.

Furthermore, with the completion of the Tenness-Tombigbee Waterway, we now have an "inland waterway network" which is bound together by the GIWW. The first tow to transit the Tenn-Tom began its journey from New Orleans to Tennessee via the GIWW.

Improvements on other waterways of this "network" likewise will enlarge the contribution of this "network" to domestic and foreign commerce.

Later this year, Lock and Dam #2 on the Red River will be completed and dependable navigation will be extended to Alexandria, Louisiana. In a few years we will have this project completed to Shreveport.

Recently, a feasibility study of a port at Alexandria was completed for the City of Alexandria. It showed a potential of nearly one million tons of traffic through that port. Even the most modest projections showed construction of the port to be feasible. I served as principal investigator on this study. The thing that struck home to me during the course of the study is the optimism that has been generated among the people knowing that navigation, with its positive economic benefits, will be available to them.

On April 13th, the groundbreaking will be held for the William Bacon Oliver Lock and Dam on the Black Warrior River near Tuscaloosa. This will be another major step in enhancing the capabilities of this waterway "network".

Further to the east, removal of a rock ledge in the Apalachicola River has provided a deeper and more dependable draft on the Tri-Rivers system of the Appalachicola, Chattahoochee and Flint Rivers in Alabama, Georgia and Florida. They have as their major outlet the GIWW.

The Water Resources Development Act of 1986 (P.L. 99-662) authorize a number of harbor and channel improvements, both deep-draft and shallow-draft, along the Gulf Coast. They include Mobile Harbor, Pascagoula Harbor, Gulfport Harbor, Mississippi River Ship Channel, Bayou Lafourche,Calcasieu Ship Channel, Sabine Neches Waterway, Houston Ship Channel, Texas City Channel, Freeport Ship Channel, Corpus Christi Ship Channel, and Brownsville Ship Channel. Where cost sharing agreements have been required and concluded, funding for these projects is included in the bill being considered by you. All of those projects, when completed, will enhance the ability of this waterway "network" to carry our Nation's commerce. GICA supports funding at full Corps of Engineers capability for these projects.

One project included in P.L. 99-662 which is of a special concern to GICA is the Industrial Canal Lock at New Orleans. Without question, this lock through which shallow-draft vessels and tows moving into the GIWW east of the Mississippi River must transit, is the greatest bottleneck on the GIWW. Traffic on the GIWW east of the Mississippi River is expected to increase significantly with completion of the improvements mentioned above. It is therefore urgent that adequate provisions be made for shallow-draft as well as deep-draft navigation through this antiquated lock, or replace it with a new lock at its present or another location as soon as practicable. P. L. 99-662 contains a provision which breaks the stalemate that has existed on this project for some time. The Corps of Engineers has its study underway, and we urge sufficient funding to complete this study as soon as possible, and when the time comes for construction, we urge you to provide the one-half funding that will be needed from general appropriations as soon as possible.

I wish to bring to your attention the provision of the Water Resources Development Act of 1986 which established the Cross Florida National Conservation Area. This effectively "mothballs" the uncompleted portions of the Cross Florida Barge Canal. We are confident, however, that future needs will demand further consideration of the construction of this waterway as well as the "Missing Link" in the GIWW along the west coast of Florida.

As the GIWW passes through coastal wetlands and bays for most of its course from Florida to the Rio Grand, environmental considerations are of utmost importance. We are having ever increasing problems in obtaining adequate and acceptable areas for placement of material dredged from the GIWW during maintenance. Some of the increased cost of providing for this is reflected in the $16,231,000 in the appropriations request for maintenance of the GIWW. The major burden, however, is born by nonfederal interest. These interests are working with the Corps, governmental fish and wildlife agencies and environmental interest to keep these cost within the ability of nonfederal sponsors to bear them and still provide adequate environmental projection and enhancement where possible through utilizing dredged material for beneficial purposes.

We are greatly concerned about the report released just a few days ago by the Department of the Interior containing its recommendations for amendments to the Coastal Barriers Resources Act. I have not received my copy, but from news releases, it appears that Interior is recommending expanding "adjacent wetlands" to include areas in the coastal barrier system far inland from the intent of the act. I speak not only with concern about the effect these recommendations, if approved, might have upon maintenance and improvement of the GIWW and connecting waterways, but I speak with a great deal of knowledge as I was deeply involved in the drafting and negotiations on the bill as it moved through Congress.

It is because of these increasing maintenance costs and future improvements we anticipate will be recommended for the GIWW when the Corps completes the study it is now conducting, that I take time to impress upon you the ever-growing importance of the GIWW as the major artery of this waterway "network" that we now have along the Gulf and the adjoining area of our country.

To further emphasis, this concept of this very viable waterway "network", I wish to mention that the Governor of Texas, who serves as Chairman of the Gulf Coast Governor's GIWW Coordinating Committee, on behalf of the five member states, has invited the second-tier states of Oklahoma, Arkansas, Tennessee and Georgia to join with them in supporting the development of the GIWW and connecting waterways of the region. This recently established committee, as it matures, will join the GICA in providing your committee with the information and support you will need to complete successfully your share of the task.

We thank you for generously providing support for the GIWW in the past. GICA pledges to you its complete support and cooperation, and on behalf of our members thank you for the opportunity to share our views with you today.

MOUTH OF THE COLORADO RIVER, TEXAS

Senator JOHNSTON. Welcome, Mr. Miller.

Mr. MILLER. Thank you. Thank you, Mr. Chairman. I have asked the privilege of inserting into the record at this moment a brief statement of the Port of Bay City in Texas in behalf of its obligation project down to the Colorado River.

I am doing so to obviate the necessity of the witnesses coming to Washington and consuming the time of the subcommittee when the merits of this project speak eloquently on the Hill. I suggest that it is a continuing project and the appropriation itself is contained in the budget and conforms to the capability of the Corps of Engineers.

The conditions of local cooperation have been accepted. The project is not controversial, being supported by both developers and environmentalists, and the project conforms to all criteria. I respectfully request the subcommittee to afford it short consideration and a short statement is attached.

Senator JOHNSTON. Thank you very much, Dale.

Mr. BEHRHORST. Senator Johnston, thank you for the opportunity to appear before you today.

Senator JOHNSTON. Thank you very much. It is always a pleasure to have you here.

Herb, you are next.

Mr. HAAR. I have some supporting rationale. I will give with our testimony next, but I certainly support everything that has been said here by the vice chairman of the board of the Gulf Intracoastal Canal Association.

[The statement follows:]

STATEMENT OF DALE MILLER, CHAIRMAN OF THE BOARD, GULF INTRACOASTAL CANAL ASSOCIATION, ON BEHALF OF THE PORT OF BAY CITY AUTHORITY, TEXAS

Mr. Chairman and members of the subcommittee, I am Dale Miller, chairman of the board of the Gulf Intracoastal Canal Association. The statement of our association is being presented by our president, Vernon Behrhorst of Louisiana, but I have asked the privilege of inserting into the record at this point a brief statement of the Port of Bay City Authority in Texas, in behalf of its navigation project, the mouth of the Colorado River. I am doing so to obviate the necessity of their witnesses coming to Washington and consuming the time of the subcommittee, when the merits of this project speak eloquently for themselves.

I suggest that the subcommittee note that: It is a continuing project—the appropriation that is sought is contained in the budget, and conforms to the capability of the Corps of Engineers—the conditions of local cooperation have been accepted—the project is noncontroversial, being supported by both developers and environmentalists.

Inasmuch as the project conforms to all such criteria, I respectfully request the subcommittee to accord it favorable consideration.

The mouth of the Colorado River project on the Texas Gulf Coast was authorized in section 101 of the Rivers and Harbors Act of 1968. The years of planning and waiting were many, but actual construction was begun in 1983.

The U.S. Army Corps of Engineers has requested $2.2 million for renewed construction of the project, and this figure is contained in the administration's budget recommendations. We urge the Congress to appropriate the requested funds, and we urge the Corps of Engineers to expend every cent on actual construction, not additional planning, so that the entire project can be expedited to completion. It is an important part of the Gulf Intracoastal Waterway system.

Senator Lloyd Bentsen and Representative Mac Sweeney are fully familiar with the project and have worked diligently to bring it to completion.

LOWER MISSISSIPPI RIVER NAVIGATION PROJECTS

STATEMENT OF HERBERT HAAR, DEPUTY EXECUTIVE PORT DIRECTOR, PORT OF NEW ORLEANS

Senator JOHNSTON. Next we do have the Port of New Orleans, the deputy executive port director.

Mr. HAAR. Thank you, Mr. Chairman. I have with me today Channing Hayden, the vice president of the Steamship Association; and Capt. Jacques Michell of the Associated Branch Pilots. I would like to submit my full statement for the record.

I would like to just briefly touch on some items of the summary statement on the front and then go through some computer graphics to show the national importance of this lower Mississippi River waterway system.

FUNDING REQUEST

I have seven items that you can see from the summary statement that I support in the administration's budget. Several cases I have recommended additional funding. In item No. 2 in the summary statement for the Mississippi River to the Baton Rouge to the gulf, I recommend O&M funding in addition to $9 million equal to the Corp's capability of additional funding because the 45-foot channel deepening project for the Mississippi River, the lower Mississippi River, is anticipated to be complete by the end of this calendar year to New Orleans.

Therefore, for the balance of fiscal year 1988, it will require an additional $89 million in funding. I also recommend under the maintenance dredging an item that had been included in item four of my statement of an additional capability of the Corps of $49 million to go forward with the bank nourishment program on Southwest Pass to repair the training works, and this has been shifted from construction general, just the day before I left and after the statement was prepared, to O&M.

Therefore, I ask that the statement be corrected to reflect that. This project, as you probably know from the Corp's testimony, has a benefit-to-cost ratio of 25 to 12 under the projected interest rates or under current interest rates of a little over 12 to 1.

This will save, upon completion of this overall project, $78 million a year. So this project is truly of great benefit and urgently needed. Otherwise, the maintenance dredging will no longer be possible in the lower Mississippi River through Southwest Pass and by the Corp's estimates, the year 2010.

Our Mississippi River gulf outlet, the new ship lock, we have urged the funding to continue. The planning for that project and the Mississippi River outlets at Venice, we recommend an administration capability on that, and, of course, we supported the previous testimony of the Gulf Intracoastal Canal Association for the continued study of that project.

GROWTH IN COMMERCE

Now, Mr. Chairman, if we could look at the computer graphics in this little blue booklet that I believe you have a copy of. I just wanted to go through several pages in that, not all of it, but very quickly, I think graphically, starting on page 1 where you have the green chart there and show the foreign waterborne commerce that moves through the Port of New Orleans.

You can see the growth with the dropoff in grain and petroleum that is shown here on the dip, but it is starting back up again in the past year. Quickly, flipping over to chart 2, you see the percentages from 1970 to 1985 that the total waterborne commerce for the Port of New Orleans relates to the nation's total.

You can see that generally averaged around 89 percent of the nation's total waterborne commerce cruised through the Port of New Orleans. Those high years in the early eighties are attributable to the larger grain movements that moved during that period.

Then flipping to the chart on page 3, you will see the Mississippi River gulf outlet, the total waterborne commerce that moved in 1985, and Mr. Chairman, the thing I want to call your attention to is a little note on the left side there, economic impact and point out that this project has a total direct and indirect economic impact of $900 million, and in relation to employment has created over 12,000 jobs. So as we provide the maintenance breaking money that has been requested for the Mississippi River gulf outlet, I think we can see the tremendous benefits of that particular channel.

Then flipping over to the next chart on page 4, I think that just highlights. On page 4 there is increased usage of the Mississippi River gulf outlet channel, showing the number of vessel passages through that channel from 1956 through 1986.

You see we are up to going from under 500 in 1966 up to 2,500 in 1986.

Now, Mr. Chairman, if you will skip to page 6, we have a couple of pie charts there that show the lower Mississippi River foreign waterborne commerce for calendar year 1985. I think that this demonstrates that we trade with the whole world, and it shows the principal countries under each of those little five charts that we have our trade with. You can see that we have over 111 million tons of foreign waterborne commerce moving through the lower Mississippi River system.

You say lower Mississippi River system. We mean Baton Rouge and the gulf. With the value that you see on the right pie chart there at the very bottom, principal countries in the dollar value with those different areas of the world of a little over $21 billion a year in terms of the economic impact.

If you will turn next, Mr. Chairman, to page 8, I have a chart there that shows the lower Mississippi River grain exports as a percentage of the total U.S. grain exports for calendar years 1968 to 1986.

You will see from that it is generally averaged around 50 percent with the latest year record as 51.7 percent of the total nation's grain exports go out of the lower Mississippi River. If you go to the next chart on page 9, you see that the grain exports, the total in terms of millions in short tons, the national total, those little blue vertical bars and the red on the right, is the total tonnage going out of the lower Mississippi River.

So you can see that we have more or less maintained that 50-percent average of the total as shown on the previous chart.

Mr. Chairman, I don't want to discuss, but just to let you know, the back of this book in section 2 is a one-page summary of some interesting facts on the Mississippi River, the size of it and the watershed area and the flow per second down there and what the sediment load is.

In the very back of the book, it is a little page and a half of the synposis of the history of the Port of New Orleans.

Mr. Chairman, that concludes my remarks. I would like to now, if I may, call on Channing Hayden, the vice president of the World Steamship Association, for a few brief remarks.

[The statement follows:]

STATEMENT OF HERBERT R. HAAR, JR., DEPUTY PORT DIRECTOR, PORT OF NEW ORLEANS BOARD OF COMMISSIONERS

1. MISSISSIPPI RIVER SHIP CHANNEL, GULF TO BATON ROUGE, LA.
   We recommend that this phased project over a two-year period funded to the Corps' full capability for Fiscal Year 1988 in the amount of $8,300,000. Completion of a major portion of this work in the Fall of 1987 will have immediate benefit of providing a reliable 45-foot channel to the Port of New Orleans.

2. MISSISSIPPI RIVER, BATON ROUGE TO THE GULF, MAINTENANCE DREDGING, STABILIZATION
   We urge that Congress appropriate $35,820,000 under O&M General, the amount in the President's budget, and an additional $9,000,000 to equal the total Corps' capability of $44,820,000 required to maintain a 45-foot channel in Southwest Pass and Bar Channel.

3. MISSISSIPPI RIVER-GULF OUTLET (MR-GO), LA., MAINTENANCE DREDGING
   We recommend Congress to authorize the full capability of $7,84 million, the same amount as contained in the Administration's FY 88 Budget.

4. MISSISSIPPI RIVER, BATON ROUGE TO GULF OF MEXICO, LA. BANK NOURISHMENT
   Continued improvement of structures comprising the training works of Southwest Pass could well decrease annual maintenance costs. We endorse the $23.0 million in construction funds included in the Administrations's FY 88 Budget for continuing the design and construction of these critical projects. However, we urge that this amount be increased by $49 million to a total of $72 million, matching the Corps' capability. These additional funds will initiate and complete an additional 13 miles of the 26 miles remaining unscheduled bank stabilization.

5. MISSISSIPPI RIVER-GULF OUTLET, LA., NEW SHIP LOCK
   The $500,000 construction funds proposed for the New Ship Lock are essential to the completion of lock reevaluation studies and initiation of general design studies. This amount matches the Corps' capability.

6. MISSISSIPPI RIVER OUTLETS AT VENICE, LA.
   This project is complete. We recommend approval of the Administration's proposed $2,383,000 equal to the Corps' capability for continued maintenance of these critical east-west navigational channels.

7. GULF INTRACOASTAL WATERWAY, LOUISIANA & TEXAS SECTION
   We urge continuation of general investigation funding in the amount of $425,000 to determine the advisability of deepening and widening project segment from New Orleans to Brownsville, Texas.

Mr. Chairman:

I am Herbert R. Haar, Jr., Deputy Port Director of the Port of New Orleans. I am here to testify on behalf of the Board of Commissioners of the Port of New Orleans, a unit of local government of Louisiana and neighboring Gulf States, the Mid-America States, and the Nation as a whole.

The year 1986 saw the passage of Public Law 99-662, the Water Resources Development Act of 1986. This long awaited development is heralded by our country's port industry. Recent years have seen a downward trend in our nation's foreign waterborne commerce and we all look forward to changing that trend in the near future. We certainly anticipate that the authorized deep draft harbor projects will put our ports in a more competitive position with other import/export bulk ports of the world. The year 1986 represents a major milestone in resolving the many conflicting interests that hindered the continuing development of our foreign waterborne commerce. Ninety to 95 percent of U. S. foreign merchandise trade by volume and two thirds of it by value moves in ships. Foreign trade has been and is today a sustaining force behind our country's growth. With 16 percent of the nation's foreign waterborne commerce passing through the ports of Louisiana, the State of Louisiana has had a profound influence on employment, plant construction and access to worldwide market places.

We believe our Louisiana ports have a distinct advantage in access to foreign markets at competitive transportation costs. In order to handle the waterborne commerce, hundreds of barge lines serve our nation's inland waterways. In the Lower Mississippi River region over 100,000 barges pass through the Port of New Orleans annually, handling the waterborne commerce of the area. To carry the cargo between New Orleans and its trading partners throughout the world --- serving, for example, more than 150 countries --- approximately 3,814 vessels operated by more than 100 steamship lines call at the port in a year's time. These trading partners and percentage of trade are Europe (37%), Asia (24%), Africa (12%), Central America (10%), and South America (15%). According to Lloyd's MARAD Data Services' reports for the first 6 months of 1985, New Orleans and the Lower Mississippi River region ports led all U. S. seaports in dry bulk vessel arrivals with 1,173. The port complex was third, behind Houston and New York, in tanker arrivals with 733.

It is undeniable that the New Orleans area plays a vital role in the international commerce of this nation. In 1985, the lower Mississippi River (Baton Rouge to the Gulf of Mexico) handled 111 million tons of foreign waterborne commerce. Worth $21 billion, this cargo represented 15% of the nation's international waterborne trade. Bulk cargo accounted for 94% of this volume, primarily the result of tremendous grain and animal feed exports and petroleum imports. More specifically, over 1.7 billion bushels of grain coming from 17 states and representing 50.1% of all U. S. grain exports entered the world market via the ten grain elevators and midstream transfer capabilities on the lower Mississippi River. This same port complex received 9.6 million tons of crude petroleum in 1984, 6% of the U. S. waterborne imports of that commodity.

Also in 1985, the Port of New Orleans handled 37.7 million tons of foreign cargo worth $11.1 billion (included in lower Mississippi River statistics). Of this amount, general cargo tonnage totalled 6.7 million tons (major commodities: iron and steel products, rice, paper products, coffee and crude rubber). Although the volume of bulk cargo statistically dwarfs the amount of general cargo handled, the significance of the port in the movement of general cargo should not be overlooked. The Port of New Orleans consistently ranks in the top five general cargo ports in the country. Furthermore, per ton, general cargo is very valuable to the community as it produces a greater economic benefit than does bulk cargo.

While the port's foreign market is worldwide, its domestic market is primarily mid-America, the heartland of the United States. This heartland region currently produces 60% of the nation's agricultural products, 1/2 of all its manufactured goods, and 90% of the country's machinery and transportation equipment. Waterborne commerce from this region is projected to reach 900 million tons by the year 2000.

Essential to our national economy is the continued growth and development of the lower Mississippi River regional complex. Most major trading nations of the world have deep draft ports and are in the process of developing more. With the passage of the Water Resources Development Act of 1986, United States ports are on the way to becoming more competitive in the world market place. On June 30, 1986, the State of Louisiana signed a Local Cost-Sharing Agreement with the Assistant Secretary of the Army for Civil Works for the first increment of deepening the Mississippi River Ship Channel, Gulf to Baton Rouge, Louisiana. This phased construction over a two-year period will see the completion of an initial 45-foot channel from the Gulf of Mexico to River Mile 181 Above the Head of Passes. We anticipate enormous benefits upon completion of this deepening project and urge that the Corps be funded to their full capability of $8,300,000 in the Fiscal Year 1988 Construction, General, appropriation.

The Port of New Orleans continues in maintaining its position as one of the nation's largest ports with a total of foreign and domestic waterborne commerce tonnage of approximately 147 million tons in 1985 while the Port of Baton Rouge, located 125 miles upriver, is the fifth port in the nation. Both port complexes are entirely dependent upon timely and adequate dredging of the Southwest Pass to provide access to the Gulf. Judging from past experiences with spring thaws bringing higher river stages and higher rates of siltation, we feel that the proposed budget of $35,820,000 is adequate but must be increased by the amount of $9,000,000 to $44,820,000 total required for maintaining the new 45 foot channel in Southest Pass and Bar channel upon completion of the construction dredging this coming Fall.

We are equally concerned with maintaining adequate depths and channel widths in the Mississippi River-Gulf Outlet Channel. In 1984, the waterborne commerce handled on the MRGO generated $586,520,800 in direct economic impact. Total (direct and indirect) economic impact of the MRGO in 1984 was $1,285,524,900. Although maintenance costs on this project cannot be related to any shoaling rate but more to severity and intensity of unpredictable Gulf storms, we believe that funding in the amount of the Corps full capability of $7,840,000 will be adequate and so recommend. Incidentally, in 1985 the 1,745 vessels calling on the MRGO Tidewater facilities accounted for 41% of the general cargo tonnage handled over public facilities at the Port of New Orleans.

The foreshore dikes, bank nourishment, and bulkhead features of the Mississippi River, Baton Rouge to Gulf of Mexico, project are vital to the navigation channel below Venice, Louisiana and in the Southwest Pass. There is a tremendous return on investment in the form of decreased maintenance costs and project depth reliability. For these reasons we urge an additional $49 million in construction funding over and above the $23 million contained in the Administration's Budget. These additional funds will initiate and complete an additional 13 miles of the 26 miles remaining unscheduled bank stabilization.

The $500,000 construction funds proposed for the Mississippi River-Gulf Outlet, New Ship Lock project are also essential at this time for the continuation of the reevaluation studies.

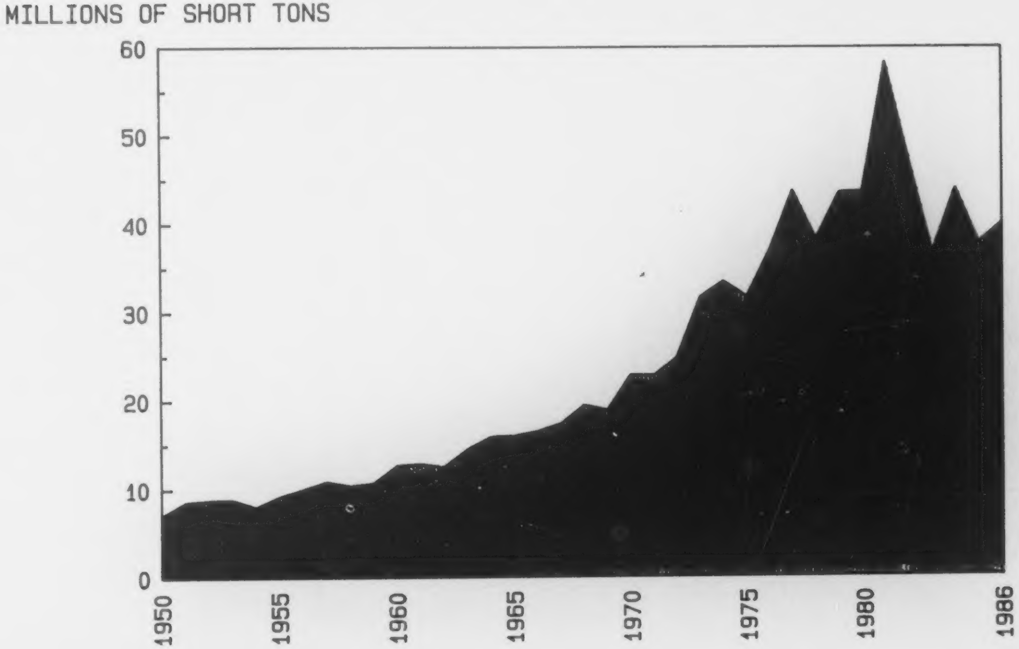
The operation and maintenance features of the Mississippi River Outlets at Venice, Louisiana are fundamental in providing safe and essential offshore support access to energy-related industries. We strongly recommend that the $2,383,000 equal to the Corps' capability be approved for continued maintenance of these critical east-west navigation channels.

Finally, we urge continuation of general investigation funding to determine the advisability of deepening and widening that segment of the Gulf Intracoastal Waterway from New Orleans to Brownsville, Texas. The requested amount is $425,000. This study addresses our concerns over bank erosion, saltwater intrusion, and required improvements for the safety and efficiency of the waterway.

Mr. Chairman, this concludes my statement. Thank you.

1986

PORT OF NEW ORLEANS
FOREIGN WATERBORNE COMMERCE*
CALENDAR YEARS 1950 - 1986**

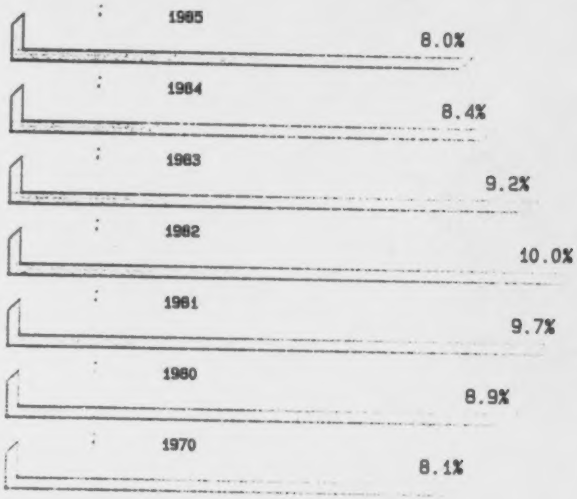


* GENERAL AND BULK CARGO INCLUDED
** PROJECTED 1986 TONNAGE

1987

PORT OF NEW ORLEANS
TOTAL WATERBORNE COMMERCE *
CALENDAR YEARS 1970 - 1985

PERCENT OF TOTAL



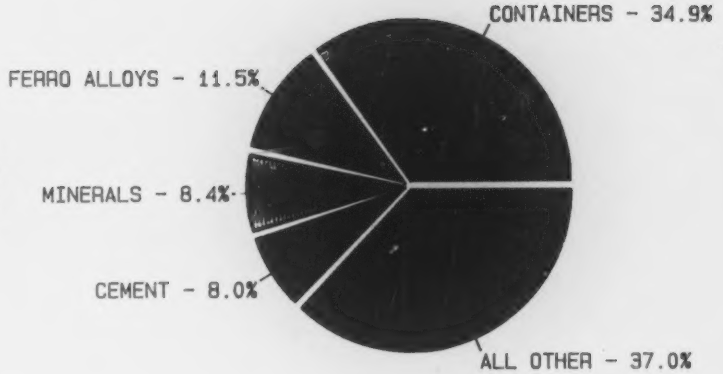
*Includes domestic & foreign movements.

SOURCE: U. S. Army Corps of Engineers

Percentage is of total U.S.

The U.S.Army Corps of Engineers defines the Port of New Orleans from mile marker 127 to the mouth of the passes.

MISSISSIPPI RIVER GULF OUTLET
1985 TOTAL WATERBORNE COMMERCE



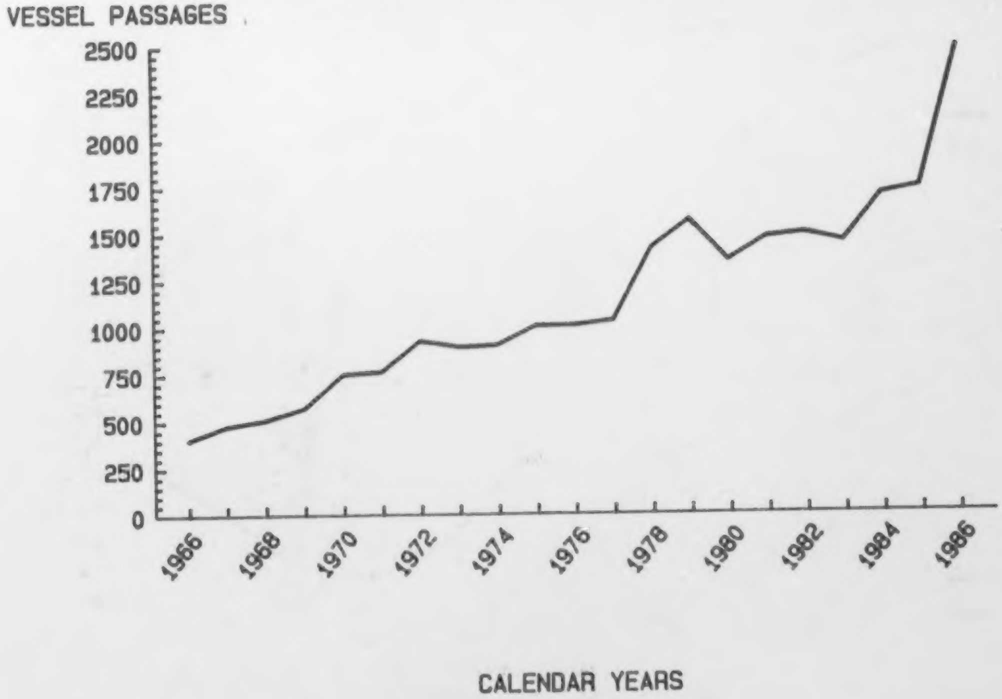
ECONOMIC IMPACT:

The total economic impact (direct & indirect) of the MRGO totalled over $900 million, which in relation to employment created over 12,000 jobs. The tidewater area handles over 35% of the Port's general cargo passing over public facilities.

Containers	2, 414, 300
Ferro alloys	798, 400
Nonmetallic minerals	584, 000
Cement	555, 700
All Other	2, 564, 000
TOTAL............	6, 916, 400

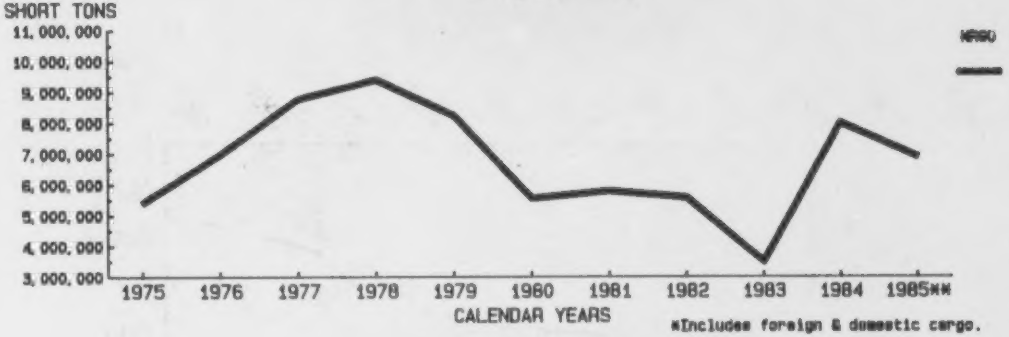
SOURCES: U.S.ARMY CORPS OF ENGINEERS (TONNAGE)
PORT OF NEW ORLEANS (CONTAINER DATA)
PORT OF NEW ORLEANS (ECONOMIC IMPACT)

PORT OF NEW ORLEANS VESSEL PASSAGES
MISSISSIPPI RIVER GULF OUTLET (MRGO)
CALENDAR YEARS 1966 - 1986



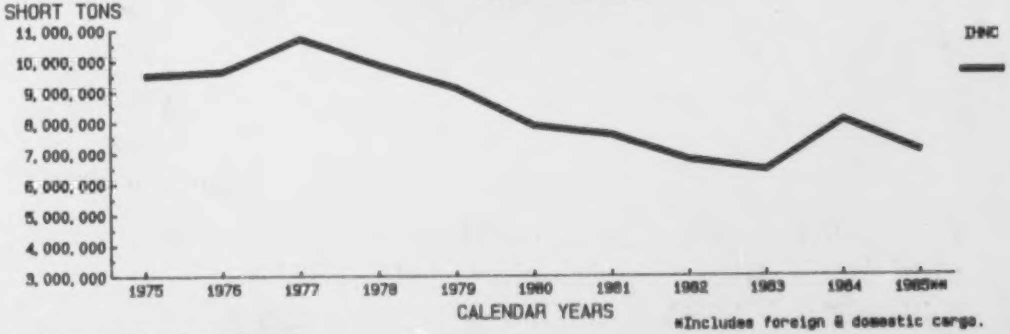
SOURCE: U. S. Army Corps of Engineers

MISSISSIPPI RIVER GULF OUTLET
CALENDAR YEARS 1975 - 1985
TOTAL TONNAGE*



*Includes foreign & domestic cargo.

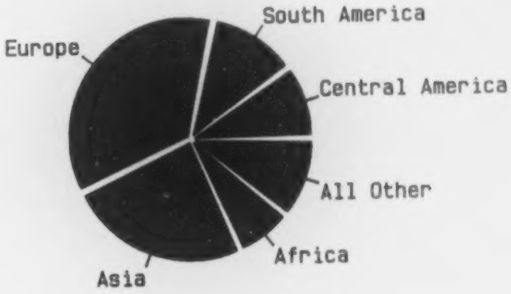
INNER HARBOR NAVIGATIONAL CANAL
CALENDAR YEARS 1975 - 1985
TOTAL TONNAGE*



*Includes foreign & domestic cargo.

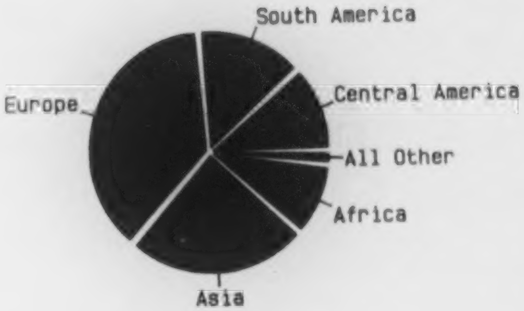
SOURCE: U. S. ARMY CORPS OF ENGINEERS

LOWER MISSISSIPPI RIVER
FOREIGN WATERBORNE COMMERCE
CALENDAR YEAR 1985



Tonnage**
By World Area

PRINCIPAL COUNTRIES:	
Japan	17,415
Soviet Union	11,701
Netherlands	10,156
Venezuela	7,084
Mexico	4,784
All Other Countries	60,212
TOTAL	111,351



Dollar Value***
By World Area

PRINCIPAL COUNTRIES:		
Japan	$	2,688
Netherlands		1,945
Soviet Union		1,410
Venezuela		1,170
Brazil		937
All Other Countries		13,038
TOTAL	$	21,189

*Includes Mexico and the Caribbean
**Thousands of short tons
***Millions of dollars

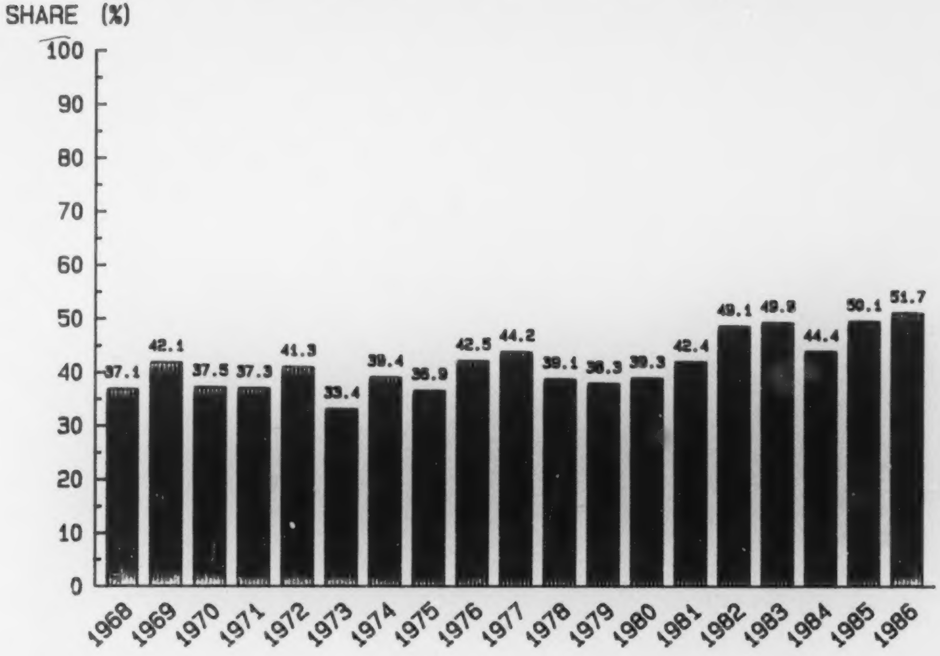
SOURCE: U. S. Department of Commerce

Lower Mississippi River
Principal Commodities
Calendar Year 1985

IMPORTS	**29,992,400 Short Tons**
Crude Petroleum	9,582,400
Metalliferous Ores	4,922,800
Iron & Steel Products	3,211,000
Crude Minerals & Fertilizers	2,669,300
Lubricating Oils	1,313,300
All Others..................	8,293,600

EXPORTS	**81,322,700 Short Tons**
Grains (unmilled)	50,024,800
Animal Feeds	9,516,100
Bituminous Coal	8,200,200
Heavy Fuel Oils	1,985,200
Coke, Pitch, Anthra Oil	1,549,700
All Others..................	10,046,700

Lower Mississippi River Grain Exports As a Percentage of the United States * Calendar Years 1968 - 1986

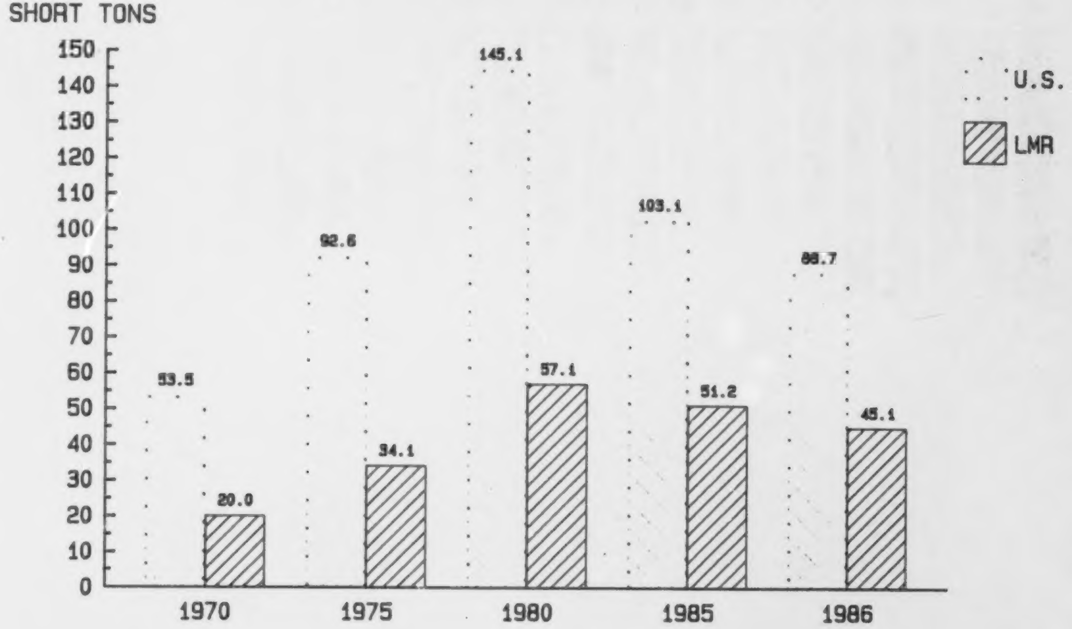


* Market Share Based on Bushels

SOURCE: U.S. Department of Agriculture

Port of New Orleans
Marketing Division

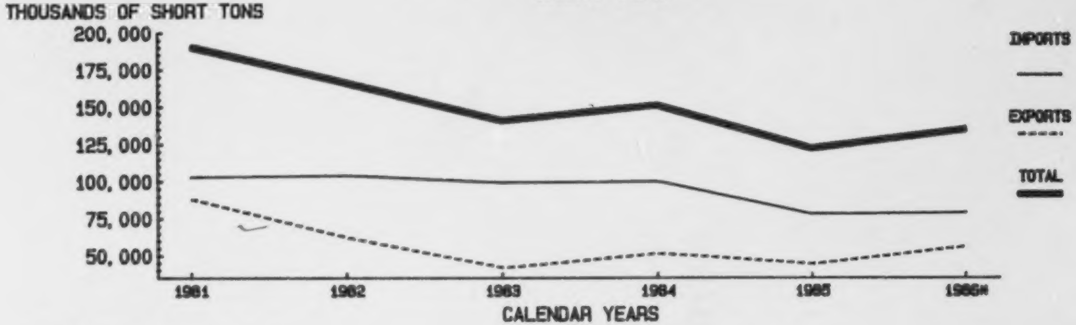
United States and Lower Mississippi River Grain Exports
Calendar Years 1970 - 1986



Millions of Short Tons
SOURCE: USDA (converted from bushels to tons)

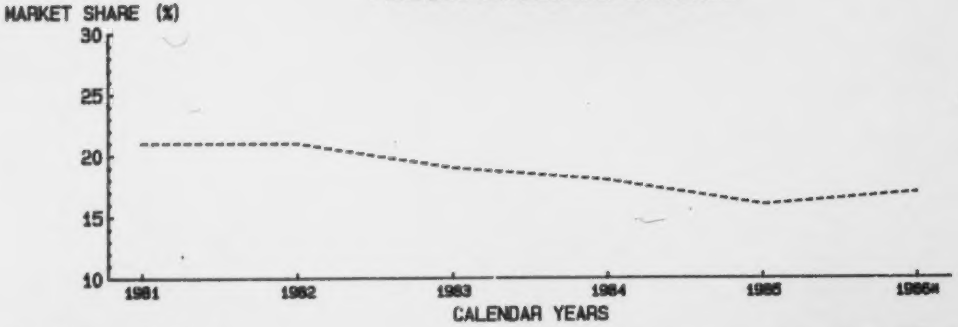
NOTE: The Lower Mississippi River is the major geographical area for U. S. grain exports.

LOUISIANA PORTS
FOREIGN WATERBORNE COMMERCE
SHORT TONS



*TONNAGE WAS PROJECTED FOR 1986

LOUISIANA PORTS
MARKET SHARE OF UNITED STATES
FOREIGN WATERBORNE COMMERCE



*TONNAGE WAS PROJECTED FOR 1986

SOURCE: U. S. DEPARTMENT OF COMMERCE

1996

STATISTICAL DATA

LOWER MISSISSIPPI RIVER

LENGTH:

2,350 miles from its starting point at Lake Itasca, Minnesota or 3,750 miles from the head waters of the Missouri River at Red Rock, Montana.

The Mississippi (including tributaries) is ranked as the third longest river in the world after the Nile which is 4,180 miles and the Amazon which is 3,912 miles long.

WATER SHED AREA:

1,244,000 square miles

The river drains 31 contiguous states in the United States and 2 provinces of Canada. This takes in 41% of the continuous land area of the United States.

AVERAGE DAILY FLOW:

460,000 cubic feet per second

This flow is equivalent to 297,000 million gallons per day.

AVERAGE VELOCITY:

3.1 miles per hour

SEDIMENT LOAD:

This load is equivalent to 138 million cubic yards per year. This yardage would fill the Louisiana Superdome in New Orleans 30 times or would cover a land area of 32 square miles to a height of 105 feet.

THE PORT OF NEW ORLEANS

In 1718, the explorer Bienville founded the city of New Orleans near the mouth of the Mississippi River --14,500 miles of navigable waterways which link more than twenty states to the markets of the world. Today, 266 years later, the US Army Corps of Engineers reports that the Port of New Orleans handled 154 million tons of waterborne commerce (1984 foreign and domestic totals).

New Orleans plays a vital role in total U.S. international commerce. In 1985, the lower Mississippi River (Baton Rouge down to the Gulf of Mexico) handled 111.3 million tons of foreign waterborne commerce. Valued at $21.2 billion, this cargo represented 17% of the nation's international waterborne trade. Bulk cargo accounted for 82% of this volume, primarily comprised of crude petroleum and iron and steel imports (3.8 million tons and 2.4 million tons respectively) and grain, bituminous coal and heavy fuel oil exports (12.3 million tons, 3.8 million tons, and 1 million tons respectively). More specifically, the same geographic area received 9.5 million tons of crude petroleum in 1985, 6.3% of total U.S. waterborne imports. (New Orleans shipped 40% of this region's imports in 1985), and 1.7 billion bushels of grain, or 50% of the U.S. total. In addition, The Louisiana Offshore Oil Port (LOOP) also handles petroleum imports via pipeline to this region. Located 19 miles out in the Gulf of Mexico, LOOP is the nation's first and only deepwater port facility.

Foreign trade through the Port of New Orleans has a major impact on the local economy. The most recently published study reports that $2.5 billion can be traced directly to port activities, while another $3 billion is indirectly related to oceangoing commerce. In addition, the port's activities helped generate some 68,000 jobs statewide in 1985.

The Port of New Orleans handled 37.7 million tons of foreign cargo in 1985, valued at $11.1 billion. General cargo accounted for 6.7 million tons (major commodities: cereal and cereal preps., paper and paperboard, synthetic resins and plastics, iron and steel, crude rubber, cork and wood manufactures). Although bulk cargo outweighs general cargo shipments, per ton, general cargo is very valuable to the community as it produces a greater economic benefit than does bulk cargo. (New Orleans consistently ranks in the top five general cargo ports of the country.)

In order to handle the waterborne commerce of the area, hundreds of barge lines serve the inland waterways and 100,000 barges pass through the port annually. To carry the cargo between New Orleans and its trading partners throughout the world (more than 150 countries), approximately 3900 vessels operated by more than 100 steamship lines call at the port in a year's time (major world areas: Europe 37% of the port's foreign tonnage, Asia 24%, Africa 12%, Central America 10%, and South America 15%).

While the port's foreign market is worldwide, its domestic market is primarily mid-America. This region currently produces 60% of the nation's agricultural products, half of all its manufactured goods, and 90% of the country's machinery and transportation equipment. According to Tipetts-Abbett-McCarthy-Stratton Mid-America Port Study (1979), waterborne commerce from this region is expected to reach 900 million tons by the year 2000. To accommodate this and other areas of growth, the Port of New Orleans launched a $400 million, 30-year capital improvement program in 1970 (valued in 1970 dollars). Currently, construction and renovation dollars are being spent at the rate of $100,000 each working day for facilities in two major areas of the port. The first is the Mississippi River, which has 12 miles of wharves that stretch along the waterfront, and the second is the tidewater area which is served by the Mississippi River-Gulf Outlet (35% of port's tonnage over public general cargo wharves is handled by facilities on the MR-GO).

The Port of New Orleans is a growing port. In the 266 years since Bienville founded the city, the port has experienced dramatic changes. One thing, however, has remained constant. The Port of New Orleans has always played and will continue to play a vital role in the local economy and in the international commerce of the United States.

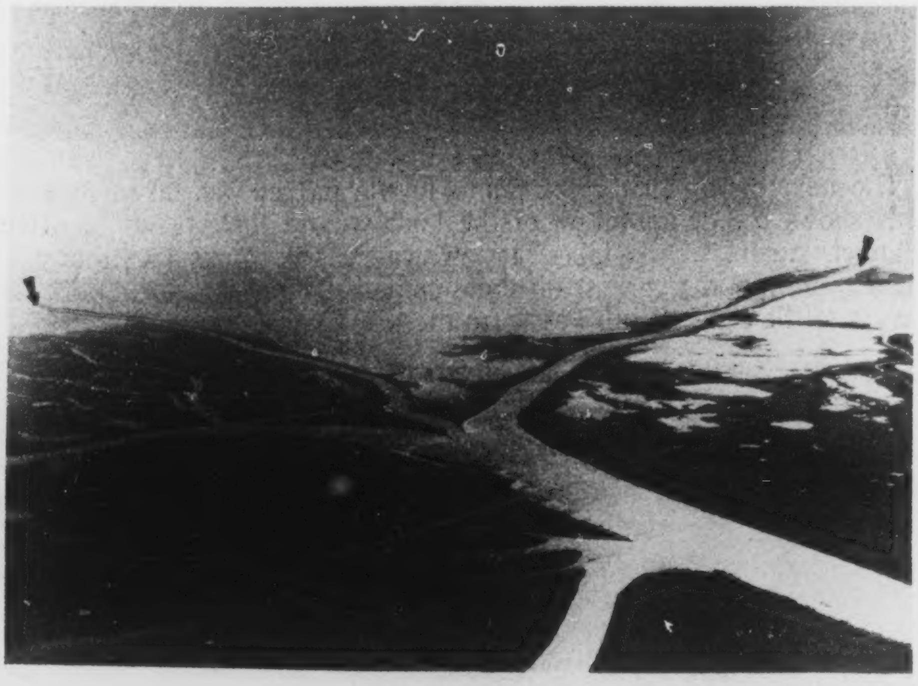
STATEMENT OF CHANNING HAYDEN, VICE PRESIDENT, NEW ORLEANS STEAMSHIP ASSOCIATION

Mr. HAYDEN. Mr. Chairman, my name is Channing Hayden. I am vice president of the New Orleans World Steamship Association. I have submitted prepared testimony and ask that it be included in the record.

Our association fully supports the statements of Colonel Haar.

I always enjoy these trips up to Washington. I get to travel with people I enjoy being with, to visit with people I enjoy being with. The best part of my visit with you is to be able to thank you all for the support that you have shown for the lower Mississippi River. Thanks to your support, we have a dredge available to us; because of your support and the work of the bar pilot. I have Captain Michelle with me here, and the Corps of Engineers, we have had a reliable 40-foot navigation channel on the lower Mississippi River now for 22 months, and because of your support, we anticipate the dredging and the first phase of the 45-foot channel will be this fall.

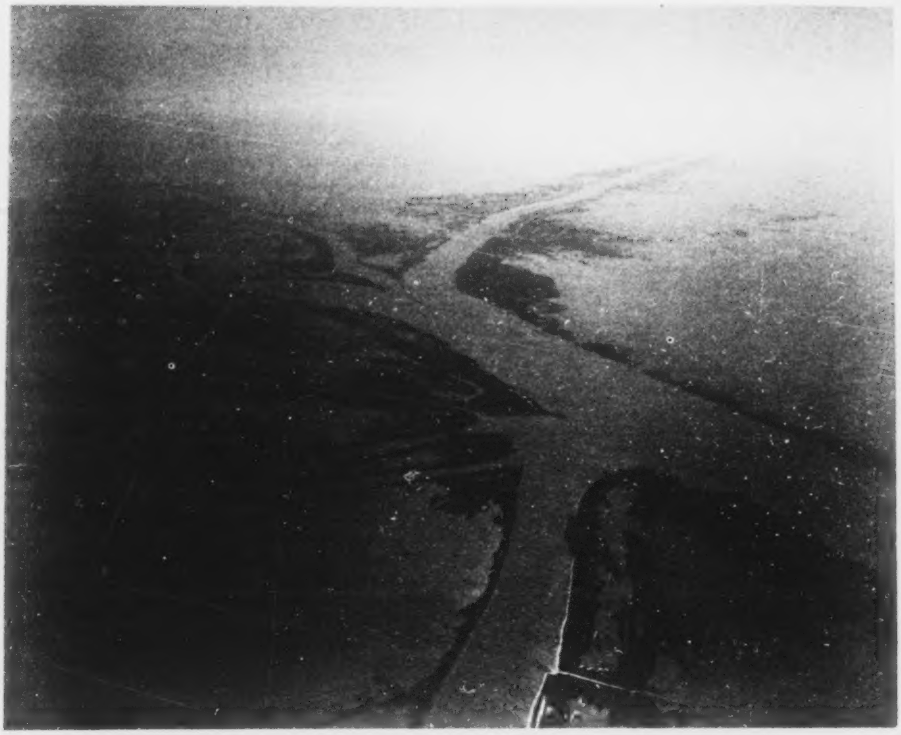
So thank you very much for the help that you have given us.



MISSISSIPPI RIVER, LA.
HEAD OF PASSES TO THE GULF

MISSISSIPPI RIVER, BATON ROUGE TO GULF OF NEW MEXICO, MISSISSIPPI AND LOUISIANA

I brought some pictures with me, and I have asked the staff to give them to you. I have given them a couple of packets, to give you some idea of the projects that we have going on the lower Mississippi River. This first picture was taken in 1938. This is Southwest Pass. The significance of this photograph is to show all of the land area surrounding the Mississippi River channel. All that dark area is land.

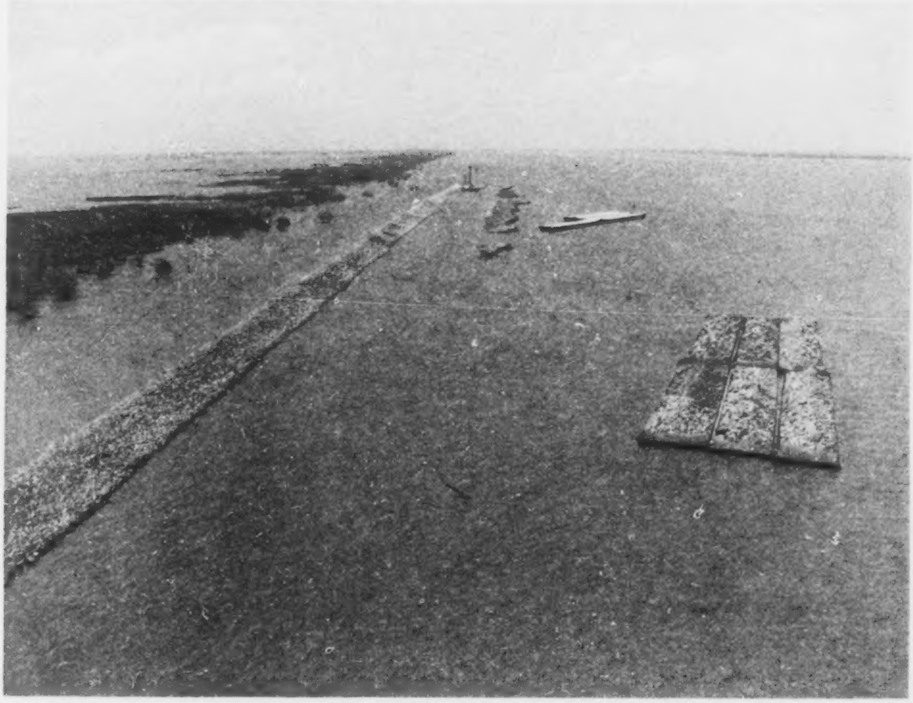


The next photo, first color photo in the packet was taken in 1985. This shows the deterioration of the land around the Mississippi River channel. Again, it was taken at low water. This looks like the same plane, same photographers; different camera. This was color. Southwest Pass is to the right; South Pass is to the left.

In order to keep the river flowing within its now very ill-defined banks, the Corps has undertaken what they call a bank nourishment project. Bank nourishment is shown on the next photograph. Here, we are looking up Southwest Pass. The white line on the right and the shorter white line on the left are rock walls that are being built to channel the water flow so that it will scour out the channel.

You can see that if it were not for this rock wall starting up here at either passes and going down below Cameron, there basically would be no defined bank here, the current would disperse, and the channel would begin to silt up.

The next photo shows a dredge pumping dredge material behind the rock wall. This is how the Corps intends to fill in land behind the rock wall and support the wall and further stabilize this area so that the channel will become self-scouring.



This next picture is a very low-level picture that has been taken and is presented to you to give you an idea of the immensity of the project that we are involved in here. This goes on almost to the horizon, as you can see in the back of the photo. Because of its immensity, we have asked for $49 million above the President's budget in order that we can complete this project soon. We believe that the sooner we complete this project, we will begin saving money on maintenance dredging.

So, if we make the investment today, we will enjoy future savings.

MISSISSIPPI RIVER—GULF OUTLET, LOUISIANA

The last picture in your packet I don't have an enlargement of, but it is an artist's rendering of the proposed lock on the industrial canal. To the left is the current lock, and to the right is the proposed lock. You can see from the difference in size of the two that the proposed lock is going to be a lot more efficient; a lot more capable than the existing lock, which was built in 1920 and which many people in our industry consider a working museum.

One of the problems with this current lock is its age. We are afraid that a catastrophe could strike this lock and some breakdown, mechanical or electrical, and close this lock to traffic for 2 or 3 months.

I can very easily imagine this happening. The machinery has been in operation longer than I have been alive. I break down very often myself, and I expect this lock will do so also. The Corps is presently doing a 3½-year study on a project that has begun, I think in 1962 or 1964.

We believe that this is unreasonable that we have to go another 3½ years to study this project. It is not really the Corp's fault. They don't have the manpower available.

So we ask that you provide the Corps not only with the money, but with additional manpower in order to get this project studied again so that we can get on with building the new lock.

Mr. Chairman, thank you for your attention.

Senator JOHNSTON. Thank you very much, Mr. Hayden. I appreciate your testimony.

We have a vote on now. Gentlemen, we are running about an hour late. I must be at an appointment at 4:30. I must vote in the meantime, which means that I will come back as quickly as possible. Then we will have about 15 minutes for the last four sets of witnesses.

I apologize for the situation we find ourselves in. So, if you will be prepared to really summarize your statements, we can complete your testimony when I return. I apologize, and I will be right back.

[Short recess.]

[The statements follow:]

STATEMENT OF THE NEW ORLEANS STEAMSHIP ASSOCIATION

1. Forty-Five Foot Channel for Lower Mississippi River.
   We recommend that the Corps' full capabilities of $8,300,000 be appropriated to complete the first phase of this project. At this funding level a reliable 45-foot channel could be operational by the fall of 1987.

2. Repairs to Jetties, Dikes and Maintenance Dredging of Southwest Pass and Maintenance Dredging of the Mississippi River from Baton Rouge to the Gulf and Construction of New Anchorage Area.

   The Lower Mississippi River, from the Gulf to Baton Rouge, ranks as a leading World Port. The President's budget appropriation for FY 88 is $35.82 million. We urge that $44.82 million for Operation and Maintenance, General, Mississippi River, Baton Rouge to the Gulf, be appropriated. The $9 million over the President's Budget would be used to maintain the 45-foot channel in Southwest Pass. We urge the approval of the $72 million for bank nourishment--$49 million over the President's budget. This will reduce O&M costs in the future.

3. The Mississippi River-Gulf Outlet Maintenance Dredging.

   Located on this waterway are the Port of New Orleans' Bulk Handling Plant, most of the Port's container facilities, the ro-ro terminal and additional facilities under construction which provide newer cargo handling methods to accommodate the larger ships now serving international trade. It is recommended that the Corps' full capability of $7.84 million as included in the President's budget be appropriated for Mississippi River-Gulf Outlet, Operation and Maintenance, General.

4. The Mississippi River-Gulf Outlet, Construction, General.

   The planning and design for the urgently needed New Ship Lock continues. This lock, once in operation, will relieve existing hazardous congestion and costly delays to foreign commerce. It will promote the economic growth and development of water-oriented industries along the Mississippi River and the Mississippi River-Gulf Outlet, thus promoting the future growth of the Port area of New Orleans. It is urged that the Congress provide the $500,000 to satisfy the Corps of Engineers' capability for the continuance of the lock design and related matters. Because of personal constraints, the reevaluation of the ship lock will take three and one-half years. This is an unreasonable amount of time to restudy a project that has already been thoroughly analyzed. We urge that the Corps' capability for this and other projects be increased by authorizing additional manpower for our District.

Mr. Chairman:

My name is Channing Hayden. I am Vice President of the New Orleans Steamship Association. Our membership of some 56 steamship owners, operators, agents and stevedores on the Lower Mississippi River is associated with hundreds of ship owners in international commerce.

My testimony concerns projects essential to the future of international commerce on the Lower Mississippi River from Baton Rouge to the Gulf. These projects, listed below, impact the nation in jobs and our ability to compete in world markets. They should be funded as noted in our summary.

1. Funding for the first phase of the Forty-Five Foot Channel for Lower Mississippi River.

2. Repairs to jetties, dikes and maintenance dredging of Southwest Pass. Maintenance dredging of the Mississippi River from Baton Rouge to the Gulf. Enlargement and deepening of the Pilottown Anchorage.

3. Maintenance dredging of the Mississippi River-Gulf Outlet.

4. Continuation of the Design Program of the Mississippi River-Gulf Outlet New Ship Lock.

Repairs to the jetties and dikes and maintenance dredging of Southwest Pass is vital in keeping project draft. Project draft, in turn, ensures that the Mississippi River's deep water ports will continue to handle the country's foreign waterborne commerce in the most cost effective way possible.

For years we have urged this committee to provide funds to maintain project draft at Southwest Pass. You have responded and the resulting benefits have proven the wisdom of your action not only for our area but the entire hinterland served by the Mississippi River System. We all remember vividly 1973 and 1974 when Southwest Pass was below project draft 70% of the time. Fortunately, with your help and the constant vigilance of the Bar Pilots, the Corps, and the maritime community, those times have not reoccurred. The charts attached show that since 1980 we have operated at or above the project draft of 40 feet more often than not. The funding you have provided was money well spent because it accomplished our goal. But we must continue the funding for two reasons.

First, we have to maintain what we have. The Bar Pilots, in their usual professional manner, are taking advantage of tidal flows and other factors to recommend the maximum draft possible consistent with navigational safety. Their success is shown by the current recommended drafts--42 feet 6 inches for vessels under 100,000 DWT and 41 feet 6 inches for vessels 100,000 DWT and over; 1-1/2 to 2-1/2 feet over project draft. To a large vessel with a loading capacity of 250 tons per inch, 18 inches (1-1/2 feet) would allow it to carry 4,500 additional tons of cargo. At a freight rate of $10 per ton, this would be a $45,000 increase in revenue. This is what keeps the Lower Mississippi River ports competitive.

We have operated at or over project draft for the past 22 months. The Corps has been instrumental in this success. Their fast response to shoaling has prevented the channel from deteriorating below project or has allowed a quick recovery to project dimensions when the channel did deteriorate. This is seen clearly from the attached charts. The funds we have requested for repairs to the jetties and dikes and for maintenance dredging is essential for our continued success in maintaining a reliable 40-foot channel.

Secondly, by this time next year we hope to be operating with a 45 foot project draft. We owe you our thanks for providing the federal share of the funds for the deeper channel. But the deeper the channel the more important the training works are. By ensuring adequate training works the maintenance cost of the deeper channel is minimized. If reoccurring maintenance dredging can be minimized by investing in training works, then the investment is cost effective. This is why we have requested $49 million over the President's budget for the project.

Since 1974 navigational interests have been urging a very important project in our area--the enlarging and deepening of Pilottown Anchorage. This anchorage is strategically located at the entrance to the Lower Mississippi River Port Complex. Some years ago Congress approved the project and the Corps' study was completed. However, the anchorage has not yet been widened or deepened. During periods of intense fog, large and/or deeply laden vessels need this anchorage as a safe haven. Without it, these vessels must transit to the Boothville Anchorage--many times with zero visibility. This project is vital to navigational safety and we urge you to provide the needed funds. Further, there is another benefit from the deepening of the Pilottown Anchorage. There is evidence that silt material from the anchorage results in shoaling within the channel in the vicinity of the Head of Passes, causing difficulties for navigation. Thus, removal of this siltation would assist in maintaining stability in channel depth for that area.

In addition, funds are needed to have dustpan dredges available to dredge the crossings above the city of New Orleans. These crossings control the draft at 8 of the 10 area grain elevators

The President's budget for Operations & Maintenance, General, Mississippi River, Baton Rouge to the Gulf is $35.82 million. We recommend an appropriation of $44.82 million. The $9 million in additional funds will be used for maintaining the 45-foot channel.

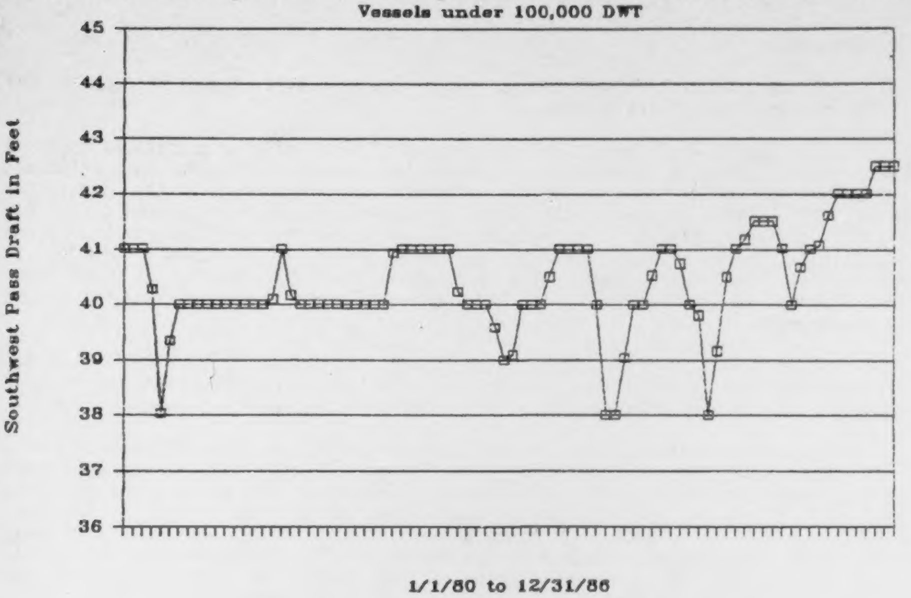
The growth of the Port of New Orleans depends, in large measure, on the Port's container and ro-ro facilities, and the Bulk Handling Plant, among others, located on the Mississippi River-Gulf Outlet. In 1986, there were 1,897 deep draft transits in this channel--up 33.5% over 1980. In years past the channel was severely restricted in depth and in width. The funds you have provided has allowed the Corps to improve the channel considerably. Despite the Corps' best efforts, the channel width is still somewhat limited. This seaway has a project depth of 36 feet. For safety reasons on this narrow channel, restrictions apply to vessels with a draft of 30 feet or more. Such vessels cannot meet or pass in certain areas of this channel causing delays to the tightly scheduled container vessels using the Mississippi River-Gulf Outlet. To improve safety on this channel and reduce or eliminate transit restrictions and delays, funds should be appropriated to dredge and maintain a holding area and provide updated and additional navigational aids. In addition, we request that the Congress appropriate

$7.84 million which is in the President's FY 88 budget for Operations & Maintenance, General, Mississippi River-Gulf Outlet.

The container terminals and the Public Bulk Terminal are located on the Mississippi River-Gulf Outlet. Grain, other bulk facilities, and the general cargo wharves are located on the Mississippi River. An adequate route between the Mississippi River-Gulf Outlet and the river is essential for efficient transit between these facilities. The shortest route is an inefficient, antiquated lock built in the 1920's with a width of 75 feet and limited to a depth of 30 feet. Its maximum capacity has long been exceeded. The average waiting time for passage through the lock has increased from 8-1/2 hours in 1985 to about 12 hours at present; however, I am personally aware of waiting time of as much as 40 hours in some instances.

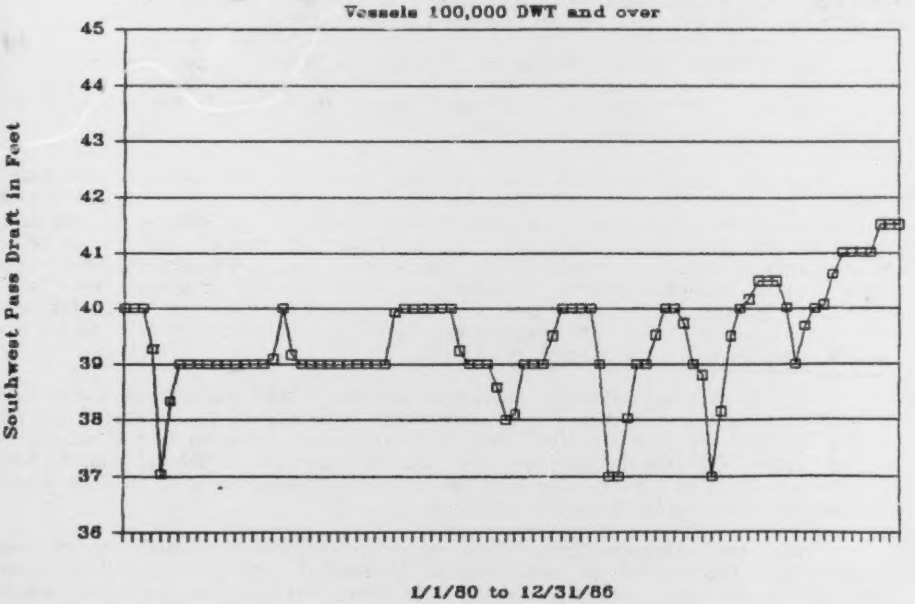
An adequate ship lock, 150 feet by 1,200 feet by 50 feet, has been authorized; and we urge that Congress provide the President's requested $1/2 million for this project. Also, we request that additional manpower be provided the Corps to reduce the scheduled three and one-half year reevaluation of this project. Three and one-half years is unreasonably long to restudy a matter that has already been analyzed.

I appreciate the opportunity to appear before you today. Thank you.



Average Monthly Recommended Draft

Vessels under 100,000 DWT



Average Monthly Recommended Draft

Vessels 100,000 DWT and over

STATEMENT OF THE ASSOCIATED BRANCH PILOTS, BAR PILOTS FOR THE PORT OF NEW ORLEANS

Mr. Chairman:

I am Jacques B. Michell, President of the Associated Branch Pilots, the Bar Pilots for the Port of New Orleans.

The Associated Branch Pilots is one of three pilot associations applying specialized piloting techniques to meet the demands of safe and efficient navigation in one of three distinctly different geographic areas on the part of the Mississippi River between Baton Rouge, Louisiana and the Gulf of Mexico. The Bar Pilots, as we are called, pilot vessels through the narrow, shallow entrance to the Mississippi River system known as Southwest Pass. We are also pilots for the Mississippi River-Gulf Outlet, which is a manmade channel, seventy-five miles long, that begins in the Gulf of Mexico and intersects the intercoastal waterway system at New Orleans.

I am here to testify with the Board of Commissioners of the Port of New Orleans and the New Orleans Steamship Association, on projects that are of vital interest to safe navigation and maritime commerce on the lower Mississippi River.

A United States Army Corps of Engineers study has reported favorably on a deep draft access to the lower Mississippi River via Southwest Pass. The deep draft access would enable vessels with drafts of as much as 55 feet to enter the river and call at ports as far upriver as Baton Rouge. The channel in the lower Mississippi River is presently maintained at a federally authorized depth of forty feet which places a physical restriction on the ability of many vessels calling the river to operate at maximum efficiency. The forty foot limit is far below the capabilities of vessels that were built more than twenty years ago.

Containerization, which has firmly established itself as the most economical and efficient method of transportation of general cargo for the present and future, continues to develop. Ships have already been constructed that are capable of exceeding present channel depths. Expansion of container facilities to meet the increasing numbers of these specialized vessels that call at the Port of New Orleans continues, with new development already planned.

The versatility of the Lower Mississippi River system in accommodating road, rail, and the most cost effective mode of transportation - waterborne transportation - is vital to the local area, the states in the region of the Mississippi River valley, and the nation.

However, development of access to these facilities has failed to keep pace. A third of all the vessels calling in the Mississippi River have the capability of loading to depths greater than the present forty foot project. Percentages are much higher in the individual categories of bulk carrier, tanker, and general cargo vessel. Vessels greater than 120,000 deadweight tons whose drafts, when fully loaded, would exceed fifty-five feet call regularly in the Mississippi. Vessels of more than 240,000 deadweight tons have also entered the river at drafts far less than their capabilities. All conditions, except increased channel depth, are available and ready in the Mississippi River.

The Mississippi River's companion channel, the Mississippi River-Gulf Outlet, continues to increase in usage. The increase in the volume of traffic results in a reduction in the need for maintenance dredging as the passage of vessels using the channel assists in the maintenance of channel depths. Some maintenance dredging, particularly of the area not bounded by land, will be needed and funding of this project should continue.

Over the years the Corps of Engineers has studied, developed, and improved the channels leading to the facilities at the several ports along the Mississippi River by constructing training works, pile dikes, bulkheads and bank nourishment projects. As they continue to develop and improve those channels their design makes them self-maintaining.

Despite the Corps efforts conditions periodically occur that require individualized attention. Unpredictable and above average snowfall and rainfall can produce increased amounts of siltation in Southwest Pass. By proper management and prioritization, the Corps has been able effect timely restoration of the authorized channel dimensions. Full Corps capability in this area should continue to be funded in order to insure the Corps ability to continue to respond effectively.

The Corps' effectiveness is probably best understood by those who are most directly affected by their efforts. In spite of the forces of nature that have in the past reduced channel depths the Corps has continued to design and construct. Their efforts have proved successful. In the past year pilots handling ships in Southwest Pass have been able to stabilize their recommendations with regard to the draft of vessels transiting the Pass. The efficiency of the Mississippi Valley transportation system is being more productively utilized in an area of great importance to the nation. That area is the export of those products that this nation has in abundance, grain and coal just to mention two, and the effect the sale of those products has on the balance of trade.

The benefits gained by the efficiency of the waterway system in the Mississippi Valley are a direct result of the efficient handling of the projects by the Corps.

Funding of the Corps initiatives in the lower Mississippi River is money well spent and money that is returning. I urge your support of the U.S.Army Corps of Engineers by your continued support of these very important projects.

Mr. Chairman, this concludes my statement. Thank you.

Coosa-Alabama River Navigation Improvements

STATEMENT OF RALPH O. CLEMENS, JR., EXECUTIVE VICE PRESIDENT, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION

ACCOMPANIED BY:

WALTER B. STEVENSON, REPRESENTING GOVERNOR HUNT OF ALABAMA

C. GRAY PRICE, MAYOR OF PRATVILLE, ALA.

Senator JOHNSTON. The hearing will come to order. We are pleased to welcome the Coosa-Alabama River Improvement Association.

Mr. CLEMENS. Sir, Mr. Mooney is a victim of the airline schedule. He has already gone back home. My name is Ralph Clemens. I am the executive vice president of the Coosa-Alabama River Improvement Association.

On your right, we have Mr. Walter B. Stevenson representing Governor Guy Hunt, and on your left, we have Mayor C. Gray Price from the city of Pratville. I would like to be able to say that we still have a cast of thousands to raise and bring pressure with, but they are all victims of the same kinds of things that you and I are fighting right now. They send their warmest regards and their thanks for making this time available to us.

I would like to ask Mr. Stevenson to say a few words.

Mr. STEVENSON. Senator Johnston, it is indeed a pleasure to be here representing the state of Alabama and Governor Hunt. We are here with the Coosa-Alabama Improvement Association to support funding for this vital project to Alabama. Governor Hunt's statement has been provided for the record and it speaks for itself. In view of the hour, I will close my remarks.

Thank you, sir.

[The statement follows:]

STATEMENT OF GOV. GUY HUNT OF ALABAMA

Dear Senator Johnston:

It is indeed a privilege to join with my fellow Alabamians through the Coosa-Alabama River Improvement Association to request your consideration for continued support of commercial navigation on the Alabama-Coosa Rivers Waterway in Alabama. Even though a severe drought hampered and even stopped commercial navigation for part of the preceding calendar year, the waterway remains a viable transportation system. In 1986 the Alabama River watershed suffered the worst drought of record, in excess of 100 years. However, we believe this rare event is behind us and look forward to the expanding role of this valuable transportation system in Alabama's and the Nation's economic development and progress.

Specifically, I join with the Coosa-Alabama River Improvement Association in requesting adequate funding of continued full-time operation and the necessary maintenance of the federal navigation system on the Alabama River, continuation of the rehabilitation and construction of training works and the necessary actions to provide a dependable channel below the Claiborne Lock and Dam. Also important is the requirement of adequate federal funding to provide for the operation and maintenance of the federal hydroelectric facilities on the systems, including upstream reservoirs.

In 1983 the design and engineering activities on the continuation of navigation on the Coosa River portion of the system was deferred. At the appropriate time, it is my hope the design and engineering can be restarted with your support. There is no doubt of the importance of this project to Alabama. During 1984 and 1985, the State of Alabama implemented through statutes the necessary action to meet the non-federal requirement which had been identified to that point in time. We stand ready to work with the federal government in a partnership of investing in the future of Alabama and the Nation.

Mr. CLEMENS. Mayor C. Gray Price, the city of Pratville.

Mr. PRICE. Mr. Chairman, I appreciate the opportunity to speak to you today on behalf of the Coosa-Alabama Improvement Association. I am the mayor of a town of about 24,000 in population. We are located 12 miles northwest of Montgomery in Tuttle County. We are on the northern fringe area of the navigable channel of the Alabama River.

We are requesting some priority funding for rehabilitation and new training guides for the Alabama channel below the Clayborn lock and dam; some funding for the Mobile Harbor deepening project; some funding for design and engineering work on the Coosa project.

Most of the written statements that you will receive will address our feelings on these and several very important additional projects. We feel it would not only enhance the economic well-being of Alabama and Georgia, but the economic well being of the whole nation.

We understand the financial crisis caused by the federal deficit and many grants and projects you feel must be cut as you work with the Senate under the restraints of the Gramm-Rudman-Hollings law.

But as a nation, we also must address the foreign trade deficit and the federal trade deficit. By funding projects to expand our nation's 25,000 mile network of navigable inland rivers and intracoastal waterways, you are not merely assisting private businesses, as many think, who locate along these waterways, but you are addressing a larger public interest and providing a larger public benefit.

Alabama's senior Senator, Howell Heflin, emphasized these benefits in a speech he gave during the dedication of the Robert F. Henry lock and dam in May 1983. Basically, Senator Heflin said that federal waterway expenditures amount to investments in the public good and that this public good takes the distinct forms of enhanced national defense, regional economic growth, employment and expanded world trade which we so badly need right now. I can't expand on, I won't expand on, these economic benefits to our nation, but we need to work together to help solve the problems of the budget deficit and foreign and federal trade deficits. But in my opinion, your support of our pleas for funding of the Alabama-Coosa River projects will definitely help in solving many of these problems in the future.

Thank you very much, Senator.

Senator JOHNSTON. Thank you very much, Mayor, and thank you, gentlemen.

Let me say, if I didn't otherwise know about the Coosa-Alabama River project, my counterpart on the House side, Tom Bevill, would remind me fairly often about that. He is a very eloquent advocate for your project, and I am sure he will not forget.

Mr. MOONEY. Sir, if I can add a few words, and that is that the Coosa is roughly in the same stage as Red River was in its infancy. The benefit-cost ratio, as determined by the Corps of Engineers, has several failings.

In my view, it is obsolescent. It is reaching a stage of antiquity. It needs to be compared very, very carefully in light of H.R. 6. I think the Corps of Engineers, as great a group of people as they are, need to take that back and rework it. Because it doesn't address the kinds of human things that you and I are most interested in.

If we can depend on you, sir, we will leave at this time and, again, thank you for your time.

Senator JOHNSTON. Thank you very much, gentlemen and all of your statements will be made part of the record.

[The statements follow:].

STATEMENT OF LISTER HILL PROCTOR, PRESIDENT, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION, INC.

Mr. Chairman and distinguished Committee Members:

I am pleased to have this opportunity to tell you what we feel is needed in the Fiscal Year 1988 Energy and Water Development appropriations for the projects listed below. As the President of our Association I speak for a large and diverse group of citizens who see continued development of the Coosa-Alabama Waterway as an opportunity for growth in our region and all of the nation.

Our membership is reflected in the composition of the delegation we brought with us today. Some use the waterway now, either as shippers or tow operators. Others are businessmen, bankers and a variety of other private individuals who have a stake in future economic development for their firms and their successors to enjoy. Then there is the larger group of elected officials and their constituents typical of the twenty-three municipalities and nineteen counties along the water who are members of this Association. These people were elected - as you were - to lead; to govern now and also plan a better future for the citizens they represent.

Mr. Chairman, we thank you for the support your committee has given us in the past. The complex funding decisions that face the Congress this year have become more challenging than ever, but we are convinced that the appropriations we support are not only essential, but will bring a substantial return on government investment.

Tabulated below are our specific funding requests for Fiscal Year 1988. The projects we support are part of a waterway system that originates in Northwest Georgia and flows diagonally across the State of Alabama to Mobile Harbor. For comparison purposes we included the amounts in the Administration's Budget Request.

New Studies/Projects	Budget Request	Our Request
. Coosa River Navigation Project Study		$ 1,600,000
. Lower Alabama Rehabilitation Project		2,000,000
Operations and Maintenance (O&M)		
. Alabama-Coosa River, AL* (Alabama River including Claiborne Lock and Dam, AL)	$ 4,538,000	4,950,000
. Millers Ferry Lock and Dam, AL	3,242,000	3,242,000
. Robert F. Henry Lock and Dam, AL	2,779,000	2,779,000
. Mobile Harbor	7,960,000	7,960,000
. Allatoona Lake, GA	4,884,000	4,884,000
. Carters Lake, GA	2,743,000	2,743,000
	$ 26,146,000	$ 30,158,000

*Includes 72 miles from the mouth of the Alabama River through Claiborne Lock and Dam up to Millers Ferry. The Coosa River is not included.

Productivity has become a byword both in the administration and the Congress. Having said that, organizations such as our Association, as well as many private citizens, are deeply involved in advancing the idea of increased productivity making industrial America more competitive in today's world. As I stated last year, spending reductions or freezes on the investments most directly linked with our country's future avoid the problems surrounding waterway development only by ignoring them, not solving them. It would seem to me that enhancing the competitive stance of our industries by reducing transportation costs would be a primary consideration of our government. Labor costs and the cost of raw materials used in manufacture fluctuate as the market demands. But transportation costs can be substantially reduced as a result of a conscious effort to improve our waterways. So it is in that vein that I and my colleagues appear before you today.

Some would say that this country's barge industry recession appears to be flattening and consolidating for an upward move. The surplus number of barges is reduced and in some ports tonnage is increasing. Oil prices are still low, however, and since oil remains the fuel of choice for many industries the demand for coal is still weak. The day will be here, though, when oil prices will be regulated by OPEC and coal in substantial quantities will be again shipped on our waterways. When that day arrives, we must be ready to carry that commodity cheaply and efficiently. That is why an investment in our waterways today is an investment in our country's future, even in light of today's fiscal realities. Indeed, the history of water development is replete with unreasoned opposition to projects such as the Arkansas River Project, The Gulf Intracoastal Waterway and a host of other efforts which have long since proven themselves to be successes.

Our founder, William Patrick Lay, who also founded the Alabama Power Company, felt that our internal waterways were a source of potential wealth to the nation but had to be developed and maintained to realize that potential. As I enter my fourth year of service to this Association, Mr. Chairman, I maintain unfailing belief in the objectives which Mr. Lay defined almost a century ago. He also implied, and I agree, that irrational short-term expectations in the river business can be a counter-productive point of view. To support that point, I must say that our Association has been striving to open the Coosa River navigation channel for almost a century. For years we have been confronted with adverse benefit-cost ratios, excessive interest rates and fiscal restraints laid on by our government. But, as Secretary Dawson has said so many times, "A new day is dawning on the partnership between government and project sponsors". Permit me to expand on that comment.

We fully appreciate the tradeoffs which were needed for the development of Public Law 99-662. Cost-sharing is now a fact of life for almost anyone involved in activities on our nation's inland waterways and ports; the cost-sharing realities include ad valorem fees, one-quarter the cost of flood control projects, 35 percent for hurricane and storm damage protection, 25 percent for fish and wildlife enhancement...and the list goes on. Probably the most substantial impact on our membership and the towing industry in general is the fuel tax for commercial inland waterway users. The present 10 cents per gallon tax will, by 1995, grow to 20 cents per gallon and will be used to help pay for new lock and dam construction. As you might imagine, the fuel tax is, and will continue to be, a substantial reduction of towing industry revenues for years to come. Although a sacrifice, the point is that cost-sharing and user fee implementation were a necessary prerequisite for passage of the bill. We are acutely aware of the enormous difficulties which confronted you, and on behalf of the Association membership, I want to express my appreciation for the determined leadership you and your colleagues showed in formulating a strong water resources development program for our country. Well done!

That being said, Mr. Chairman, the new "partners", as Mr. Dawson has so rightfully described us, now will begin to make their needs known in terms of inland water development. The fuel tax is, in reality, an investment taking the form of the Waterways Trust Fund, funded not by the government but by the users themselves. As with any investment, a reasonable return should be expected. In our case, and for the people of the Coosa-Alabama Basin, we are here today to discuss that return with the goal of improving our rivers and stimulating what is fast-becoming an economy that is stalled throughout the basin.

With that preface firmly in mind, we feel confident in requesting funds for two projects which are not included in the President's budget but which are crucially important in developing the potential of our two great rivers.

The latest study of the Coosa River Navigation Project is approaching seven years of age. During those years, the economy has undergone substantial changes. Our state is in the throes of confronting severe questions of a fiscal nature. The nation is wrestling with balance of trade problems and deficits. One without a vision to the future would be inclined to say that funding will not allow work to be done on the Project. We know, however, that you and your knowledgeable colleagues, Mr. Chairman, are painfully aware that the game of "catch-up" does not apply in global economics. For that reason we must take that first step and commit ourselves to a project which is long overdue; a project which will bring jobs and an increased standard of living to a region which needs it most; a project which will increase the competitive stance of Alabama industries throughout the world. Overseas river transportation technology has developed rapidly and to the point that it is reasonable to expect substantial savings in construction costs. We are formally requesting 1.6 million dollars to initiate a new study on the Coosa River Navigation Project. Again, it is only a first step but a step which must be taken for the good of the Basin. Additionally, it is a very small return on the massive investment in fuel taxes I described earlier.

Our second request is for 2.0 million dollars to enable the Corps to move expeditiously on the Lower Alabama Rehabilitation Project. This is a project which has been delayed for over 11 years and has resulted in lost tonnage and revenue due to chronic channel navigation problems. Severe shoaling, threatening rock formations and degraded training dikes have combined to make the Alabama River, particularly downstream from Claiborne Dam unreliable and inefficient. Members of our Association attended the Corps of Engineers' public meeting which addressed the project in Monroeville on February 26th of this year. The Corps' presentation was typically professional and thorough. More important, however, they are ready to press on with taking on the project as soon as directed! We cannot afford more delays on this crucial project -- as soon as the Mobile District Engineer's record of decision is complete he should have the funds and authority to proceed immediately. The Association considers this to be a priority project deserving your immediate attention, Mr. Chairman.

With regard to annual Operations and Maintenance expenditures, the Association supports the President's budget request. The lone exception is the provision for 412 thousand dollars (Coosa-Alabama River) to enable the Corps to handle administrative and planning details coincident with an expedited beginning of the Lower Alabama Rehabilitation Project.

In closing, Mr. Chairman, I want to reassure you and the distinguished members of the subcommittee of our unending support for fiscal responsibility. But, equally sincerely, I wish to make clear that we must progress beyond paying homage to the almost automatic veto-like reaction of long-obsolete formulae which long ago outlived their utility and have never factored into their equations the needs and aspirations of hardworking and deserving Americans, both in Alabama and throughout the nation!

We have brought with us the statements of highly-experienced men and women; some captains of industry; others the people who work in the river; still others who are citizens imbued with the vision of a greater Alabama through river development. While one cannot quantify their combined experiences, they know of what they speak! And what they are saying is a solid statement of support for the three primary objectives of the Coosa-Alabama River Improvement Association:

1. Improve and maintain the Alabama River.
2. Deepen and maintain Mobile Harbor.
3. Open the Coosa River for navigation.

We sincerely appreciate the opportunity to speak before this distinguished subcommittee. We know that you will receive our requests with balance and consideration. Our people, as indicated by our delegation who spent time and treasure to join us today, will continue to speak out in favor of this vitally needed package of improvements. Thank you.

COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION'S DELEGATION APPEARING BEFORE THE SENATE SUBCOMMITTEE ON APPROPRIATIONS FOR ENERGY AND WATER DEVELOPMENT HEARINGS -2:00 P. M., MARCH 30, 1987.

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1. Walter B. Stevenson, Jr., ADECA, representing Governor Guy Hunt, Montgomery, AL
2. Lister Hill Proctor, President, CARI Association, Sylacauga, AL
3. Burgett H. Mooney, Jr., Vice Pres. for GA, CARI Association, Rome, GA
4. Ralph O. Clemens, Jr., Executive Vice President, CARI Association, Montgomery, AL
5. Ada W. Paravicini, Adm. Assistant, CARI Association, Montgomery, AL
6. Mary B. Funderburk, Retired Businesswoman, Montgomery, Alabama
7. Kenneth I. Chesnut, City Councilman, Camden, Alabama
8. Susan Chesnut, Businesswoman, Camden, Alabama
9. Elizabeth Chesnut, Student, Camden, Alabama
10. Grace Chesnut, Student, Camden, Alabama
11. J. T. "Tom" McKenzie, President, Coosa River Action Council, Gadsden, AL
12. Allen Champion, Asst. to Mayor David Nolen, Gadsden, Alabama
13. Billy Ray Williams, Etowah County Commissioner, Gadsden, Alabama
14. Roger C. Ellison, Etowah County Engineer, Gadsden, Alabama
15. Judge Otha Lee Biggs, President, Monroe County Commission, Monroeville, AL
16. Sue L. Glidewell, Mayor, Rainbow City, Alabama
17. W. L. "Bob" Moman, AL Gas Corporation, Gadsden, AL
18. J. T. "Jamie" Jordan, Businessman, Centre, Alabama
19. Shirley N. Wesson, Businesswoman, Mobile, Alabama
20. Shelley A. Wesson, Student, Mobile, Alabama
21. Elizabeth J. "Liz" Paravicini, Businesswoman; Elmore, Alabama
22. William E. "Bill" Paravicini, Jr., Student, Auburn University, Auburn, AL
23. Phillip Sanguinetti, The Anniston Star, Anniston, Alabama
24. Ralph Meade, Chairman, Cherokee County Commission, Centre, Alabama
25. Michael Kimak, Businessman, Montgomery, Alabama
26. Anne F. Kimak, Businesswoman, Montgomery, Alabama
27. James H. Sanford, Businessman, Prattville, Alabama
28. C. Gray Price, Mayor, Prattville, Alabama
29. Jerry Sims, Executive Assistant to the Mayor, Prattville, Alabama
30. W. C. Helveston, Administrator, Mobile County Commission, Mobile, Alabama
31. Sheldon L. Morgan, Sr. Vice President FAB, Mobile, Alabama
32. Leon M. Torbert, Jr., Dravo Basic Materials, Mobile, Alabama
33. John A. Mixon, General Manager, Warrior & Gulf Navigation, Chickasaw, AL
34. Sid Willingham, Insurance & Real Estate, Rome, GA

35. Tom Brock Jordan, Businessman, Centre, Alabama
36. Martin Mitchell, Rome, Ga.
37. Jim Harrington, Rome, Ga.
38. Dearyl Glenney, Washington, DC.
39. Judge Jim Corley, Prattville, Ala.
40. Bobby Thomas, Washington, DC.
41. Scarlett Redd, Prattville, Ala.
42. Buddy Browning, Alabama State Docks, Mobile, Ala.

STATEMENT OF THE MISSISSIPPI CHEMICAL CORP.

Dear Senator Johnston:

Mississippi Chemical Corporation is a user of the Alabama River and supports the Coosa-Alabama River Improvement Association in its efforts to secure continued funding for its maintenance and improvement.

Our company has three manufacturing locations (Yazoo City, Ms.; Pascagoula, Ms.; and Donaldsonville, La.), producing and distributing fertilizers to its farmer/stockholders in the mid-south. In order to facilitate delivery of fertilizers to the farmers in a short time-frame and at the most economical cost, various storage/distribution facilities at strategic locations are utilized. One of these is on the Alabama River at Montgomery, with barge transportation being utilized in the placement of fertilizers at Montgomery. A freight savings is realized by using barge transportation over rail or truck. In today's highly competitive market, this savings is vital to the cost of fertilizers.

Annual shipments to Montgomery have varied due to river and market conditions to a high of approximately 45,000 tons. This year's shipments were down considerably due to both the drought conditions which prevailed in the southeast this past year as well as the poor economic market for agricultural products. With these conditions, however, the freight savings, which enable us to lower costs of fertilizers to the farmers, were even more essential.

As you are aware, the waterways fuel tax has increased our freight cost. The monies generated by this tax should certainly be used exclusively for the maintenance and improvement of the rivers so as to directly benefit the source of this revenue.

Your support of the waterway industry and your continuing efforts for funding is greatly appreciated.

STATEMENT OF THE LOGAN MARTIN LAKE ASSOCIATION, INC.

Dear Sir:

The Logan Martin Lake Association which represents membership from the Counties of St. Clair and Talladega, is urging your support of the Coosa River Navigation Project for FY88. We feel the completion of this waterway project will not only result in a positive impact upon the Coosa Valley but will also enhance the quality of Logan Martin Lake.

Thank you for your consideration,

STATEMENT OF THE MONTGOMERY AREA (ALA.) CHAMBER OF COMMERCE

Dear Senator Johnston:

One of the prime goals and purposes for the organization of the Montgomery Area Chamber of Commerce back in 1882 (an organization date recently confirmed) was to establish a navigable channel on the Alabama River from Montgomery to Mobile. This project has been pursued ever since and was reorganized, reactivated and successfully pursued from the mid 1950's up to the present date, as The Coosa-Alabama River Improvement Association.

Thanks to the wisdom of your predecessors in Congress, your colleagues and you, that dream is a fact and we call on you now to continue, expand and increase the use and the potential of this national and vital waterway.

Continued federal maintenance and operations of the Alabama River Waterway from Mobile to Montgomery is essential. Resuming the design and engineering work on the Coosa Project which was suspended in 1983, must be done not only for the economic development of the project this region effects, but to make sure the monies already spent are not lost.

I think a valid point, also, in addition to those already made and which support your continued funding, is that waterways provide efficient transportation productivity that lowers inflation and reduces the national deficit. The latter of course, is very much in the forefront of your thoughts these days.

Lastly, studies of completed waterways such as the Arkansas, the Gulf Intercoastal Waterway as well as the planned Coosa Project, show that returns fully justify the investment. It seems to us that projects such as ours which are underway and vital to the region and the nation, that help the nations economy, and that give the taxpayers a good return on their investment is something we can ask your assistance for with every confidence that it is worthy of your full and complete support.

STATEMENT OF THE MONROEVILLE AREA (ALA.) CHAMBER OF COMMERCE

Dear Senator Johnston:

The Monroeville Area Chamber of Commerce, Monroeville, Alabama, supports the Coosa-Alabama River Improvement Association's requests for FY88 to maintain and extend the waterway from Rome, Georgia, to the port of Mobile, Alabama.

It is respectfully requested that the Congress authorize the design and engineering work to resume on the Coosa project, which was suspended in 1983. The full economic impact will not be realized until both the Coosa and Alabama Rivers are made navigable from Rome to Mobile.

It is further requested that the rehabilitation and modification of the dredging profile of the Alabama River channel below Claiborne be continued. Federal maintance and operation of the Alabama River waterway from Mobile to Montgomery should be contunued. For Mobile to become tbe deep water port that it should be to accomodate the development of the important river system, it is important to maintain the schedule for the Mobile Harbour Deepening Project.

STATEMENT OF THE ALABAMA RIVER PULP CO., INC.

Dear Senator Johnston:

Alabama River Pulp Company, Inc is pleased to participate in the efforts to improve the Coosa-Alabama Waterway and maintain the Alabama River as a viable waterway.

As the Alabama River channel is improved, we will have the opportunity to expand our barging operations as much as economically possible to acheive lower transportation costs for incoming raw materials, fuels, supplies and outgoing finished product.

We produce bleached market kraft woodpulp both for the domestic and export market. In 1986 we barged no tons of outbound finished product but received 11,315 tons of inbound of #6 Fuel Oil.

During the years of 1985 and 1986 we have studied the economic feasibility of receiving steam coal by barge and barging finished woodpulp to our domestic customers in Wisconsin, Michigan, Ohio and the Northeastern part of the United States.

To date we have not received any steam coal by barge in 1986 due in part to the high capital investments required by our company necessary to install a coal receiving systems at our mill location.

Alabama River Pulp Company's steam coal usage is approximately 60,000 tons annually. Our domestic shipments of finished product considered for barging is approximately 100,000 tons to Wisconsin and Michigan customers and approximately 75,000 tons to customers in Ohio and Northeastern United States for a possible total barging volume of 175,000 tons that may be shipped via the Tenn-Tom Waterway.

It is our intent to use water transportation whenever economically possible because we predict this mode of transportation will experience the lowest rate of cost increase over the next five to ten years.

While the Alabama River has an authorized project depth of nine feet and at this level could be sufficient for the Alabama River Pulp Company's barge movement of pulp from the mill to our domestic customers in Wisconsin, Michigan and Ohio, this draft historically has been available to commercial traffic for only approximately nine months each year. An example would be during the late summer and early fall, there is a 90-100 day period of "low water" when the river depths are less than eight feet which restricts usable barge drafts to about seven feet. Conversely, a "high water" period in the spring months produces swift currents making navigation difficult on several critical and narrow bends.

The Corps' Mobile office is congnizant of the aforementioned problem facing commercial interest on the Alabama River and within their discretionary authority, has instituted studies aimed at corrective alternatives. Possible short intermediate term solutions being evaluated include: increased regulation of water discharges at the Claiborne Lock and Dam which should partially mitigate the seasonal low water problem: modified operational procedures for the Jones Bluff and Millers Ferry projects (up-river) to capture and harness all available water flows above Claiborne: and, additional dikes and "training" structures on the lower river to further confine water-flows, thereby increasing depths in critical reaches of the waterway.

Should these alternatives prove to be ineffective in solving this long standing problem on the Alabama River, the Corps has also indicated that it may be necessary to seek funding, as to identify additional projects or authority needed from the Congress to increase the River's lowflows.

We are pleased to be located on the Alabama Waterway in Monroe County and look forward to the improvement of this vital waterway. We must all work together to converse our energy resources in the most efficient manner possible.

We respectfully request your concurrence and recommendation of funding being sought by the Coosa-Alabama River Improvement Association for fiscal year 1987.

STATEMENT OF ROME (GA.) CITY COMMISSION

Dear Chairman Johnston:

On behalf of the citizens of Rome, Georgia we would like to file the following statement of support.

We believe that water based transportation is an essential and integral part of the national transportation system. It will have an increasing significance in future years because it requires less fuel and less labor per ton-mile when compared to other transportation modes.

It is our view that these projects are not an expense to this nation. They are an investment in our economic development and future.

Therefore we would like to state our support for the following activities in the Coosa-Alabama River area:

1) Resume design and engineering work on the Coosa Project, which was suspended in 1983.

2) Begin rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne.

3) Continue maintenance and operation of the Alabama River waterway from Mobile to Montgomery

4) Continue operation and maintenance of the upstream reservoirs and hydroelectric power plants at Allatoona and Carters Lake in Georgia.

5) Maintain and improve the Mobile Harbor.

We further feel that a public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole.

On behalf of the citizens of Rome I wish to thank you in advance for your consideration of these matters.

STATEMENT OF GREATER ROME (GA.) CHAMBER OF COMMERCE

Dear Mr. Johnston:

We enclose a resolution from the Greater Rome Chamber of Commerce in the interest of the continuing development on the Coosa-Alabama River System.

We acknowledge, with sincere appreciation, the wholehearted support and appropriations that have made it possible to plan, begin, and continue, construction on the system's projects.

We hold this program to be a splendid example of cooperation between the federal government and private power company development for the benefit of the entire Southeast.

- RESOLUTION -

WHEREAS, those counties lying within the basin of the Coosa-Alabama rivers are experiencing economic growth due to the current development program now underway on the rivers, and feel this will accelerate even faster when the Coosa-Alabama waterway is fully navigable from Mobile, Alabama to Rome, Georgia; and,

WHEREAS, extensive commitments to private investment on navigable waterways have been made on the assumption that federal maintenance and operation of the waterways would be continued, and studies of completed waterways such as the Arkansas, the Gulf Intracoastal Waterway, and also of the planned Coosa Project, show that the returns fully justify such investment; and,

WHEREAS, waterways provide a competitive alternative for shippers, (rail rates on grain from the mid-West are already lower since opening the Tennessee-Tombigbee); lowered freight rates are in the national interest as manufacturers and farmers compete to improve our balance of payments; and,

WHEREAS, waterways provide efficient transportation productivity that lowers inflation and reduces national deficits; and,

WHEREAS, a public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole; and,

WHEREAS, the Waterways Trust Fund, maintained by user fuel taxes, should be considered an investment by the users and should be returned as an aid to expanded development; and,

WHEREAS, dynamic economic growth, increased hydropower and barge transportation facilities, a more productive way of life, as well as increased recreational enjoyment, are but a few of the numerous benefits that will accrue when this great system is developed;

NOW, THEREFORE BE IT RESOLVED, that the Greater Rome Chamber of Commerce approves testimony by the Coosa-Alabama River Improvement Association for support of appropriations on the following projects:

(1) Resumption of design and engineering work on the Coosa Project which was suspended in 1983;

(2) Continued rehabilitation and added construction of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne; this is a project which is long overdue for completion;

(3) Continued federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery;
(4) Continued operation and maintenance of the upstream reservoirs and hydropower plants at Allatoona Lake, and Carters Lake, in Georgia;
(5) Maintaining the schedule for the Mobile Harbor Deepening Project.

NOW, THEREFORE BE IT FURTHER RESOLVED, that we strongly urge appropriations representing the capability of the Corps of Engineers for Fiscal Year 1988.

Approved and adopted in regular session of the Board of Directors of the Greater Rome Chamber of Commerce this 26th day of February, 1987.

STATEMENT OF JAMES H. SANFORD, DIRECTOR, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION, INC.

Dear Senator Johnston:

Thank you for this opportunity to present testimony to the Subcommittee on Appropriations for Energy and Water Development. As a Director of the Coosa-Alabama River Improvement Association, Inc., I herewith present unequivocal support for our Association's request for the fiscal year 1988 budget request that pertain to the Coosa and Alabama Rivers in the great state of Alabama.

In representing the interest of agriculture, I am very keen and aware of the competitive advantage that our improved waterway systems allows the United States farmer to enjoy. Talk about competitiveness, we in the United States have it in our infrastructure of the U.S. waterway system. We must maintain this competitiveness by continuing to budget for Federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery. It is equally important to maintain the schedule for the Mobile Harbor Deepening Project and to plan and continue design and engineering work on expanding navigation to the Coosa River.

In 1986 the Foreign Agriculture Service (FAS) of the United States Department of Agriculture (USDA) co-sponsored a Cotton Credit Mission Team. As a member of this team, we visited some of the Pacific rim countries and some of the European countries, including socialistic planned communities such as Yugoslavia. Transportation is an intracable part in the marketing of agricultural products. Our infrastructure is far superior within the United States and is uncomparable to the infrastructures within foreign countries. This infrastructure and more particular the waterway systems are a tremendous competitive advantage which allows us opportunities to market our commodities in a reliable, timely and efficient manner. We must continue to provide maintenance and expansion of the waterway systems of America.

We commend you on your committee's prior support in the development and maintenance of our waterway systems. Please know that we continue and seek to serve you in pursuing this most important goal for our waterway systems.

STATEMENT OF ROBERT M. CRESWELL, CAMDEN, ALA.

Dear Senator Johnston:

I served as Resource Manager on the Alabama River for the Corps of Engineers from 1969 to 1985 and wish to express my support for the requests of the Coosa-Alabama River Improvement Association, Inc., of which I am a member. I am part of a collective effort to maintain and extend the Coosa-Alabama River Waterway.

It is essential that the training dike system on the Lower Alabama River be maintained, rehabilitating present dikes and constructing additional structures to preclude serious siltation in that area. It is also essential that the dredging profile be modified below Claiborne Dam.

A basis need, of course, is the continued Federal maintenance of and operation of the Alabama River waterway from Mobile to Montgomery, including locks, dams, recreational facilities and powerhouses.

With the completion of the Tennessee-Tombigbee Waterway, it is likewise essential that the schedule for the Mobile Harbor Deepening Project be maintained.

The Coosa Valley is an underdeveloped region and further development of this area would enhance the economic development of the nation as a whole.

It is hoped and urged that your committee will act favorably on the FY88 requests of the Coosa-Alabama River Improvement Association, Inc.

STATEMENT OF MONROEVILLE, ALA.

Dear Senator Johnston:

The Monroeville City Council, Monroe County, Alabama, respectfully submits to you its continued support for the development and maintenance of the Coosa-Alabama River System.

We support the Association's request for Fiscal Year 1988 funding as the total economic benefits to the southeastern region of the United States will not fully be realized until the Coosa-Alabama rivers are fully developed and navigable from Rome, Georgia to Mobile, Alabama.

We specifically request that the design and engineering work on the Coosa Project, which was suspended in 1983, be resumed. We further request that rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne be continued, for proper and uninterrupted navigation to accomodate the industries already located along this river system.

Studies of completed waterways such as the Arkansas, and also of the planned Coosa Project show that the returns fully justify the investment.

We, therefore, respectfully request that favorable consideration be given to all of the recommendations for funding for Fiscal Year 1988 for the eventual completion of this most important and much needed river system.

STATEMENT OF WARRIOR & GULF NAVIGATION CO.

Dear Senator Stennis:

I am Nicholas J. Barchie, Jr., President of Warrior & Gulf Navigation Company. Our company is a member of the Coosa-Alabama River Improvement Association and hereby supports the testimony to be presented by this Association.

Warrior & Gulf joins in a collective effort to improve the efficiency and reliability of the Coosa-Alabama System due to energy efficiency and lower costs are in the national interest as manufacturers and farmers compete in the world market to improve our balance of payments. Moreover, waterways provide a competitive alternative for shippers as well as efficient transportation productivity that lowers inflation and reduces national deficits.

Warrior & Gulf Navigation owns 27 towboats and 305 barges. Additionally, we operate two barge drydocks and one boat drydock at our Chickasaw facilities; and, a wholly owned subsidiary of WGN, Mobile River Terminal, is a bulk terminal handling various cargoes from and to ocean-going vessels in the Port of Mobile. We employ approximately 300 people.

Warrior & Gulf has been using the Alabama River for over ten years. The major limitation encountered on this river is severe shoaling during the summer months wherein the draft is restricted to 6 feet or less below Claiborne, thus requiring a very shallow draft vessel to perform towing. Therefore, continued rehabilitation and modification of the dredging profile for the Alabama River channel below Claiborne is a project which is long overdue for completion.

We respectfully request your support in this matter when your subcommittee considers appropriating funds for the Alabama River's FY88 operation and maintenance.

STATEMENT OF WETUMPKA, ALA.

As Mayor of the City of Wetumpka, and on behalf of the Council and all citizens, I support the Coosa-Alabama River Improvement Association's request for FY88 and join in a collective effort to maintain and extend the waterway which would resume design and engineering work on the Coosa Project suspended in 1983.

In addition, because of the economic value of the Coosa River to our city, we recommend the amendment of PL 99-662, The Water Resource Development Act of 1986 (Section 608 b), to read Alternative C covering the erosion problem at Fort Toulouse. The recommendation would eliminate the condemnation of land belonging to our troubled farmers in the area.

Further, the Mountain Creek Mining Company located only 18 miles from the proposed loading dock on the Coosa River at Wetumpka would be able to supply the rip-rap outlined in Alternative C, thereby cutting the cost of the project. It is hopeful that this project covering the protection of Fort Toulouse, a National Historic Landmark, can be federally funded so that the work may be accomplished expeditiously.

STATEMENT OF MOBILE COUNTY, ALA., COMMISSION

Dear Senator Johnston:

The Mobile County Commission wishes to take this opportunity to express our enthusiastic support of the FY '88 appropriations request of the Coosa-Alabama River Improvement Association, Inc. This organization is dedicated to the continued improvements of various waterways in Alabama.

Waterways play a major role in the economy of Alabama. Industrial, agricultural and recreational uses of the waterways create jobs and strengthen local and state economies. Waterways provide one of the most efficient transportation methods available and help Alabamians to be more competitive on the national and international markets. Moreover the economic impact helps to lessen inflation and improve balance of payments on the international level, which in turn helps all Americans.

The continued federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery and maintaining the schedule for the Mobile Harbor Deepening Project will have a tremendous, positive economic impact on the state and numerous cities and counties along the route. The deepening of Mobile Harbor will assist it in competing with other harbors along the Gulf Coast and will maximize efficient utilization of the Tennesse-Tombigbee Waterway.

Continued funding of the Coosa-Alabama River Improvement Association, Inc. at requested levels represents an investment in the infrastructure of our nation and will benefit all Americans through increased economic opportunity.

Your continued support will be sincerely appreciated.

STATEMENT OF AGRICULTURAL SERVICES OF ALABAMA, INC.

Dear Mr. Johnston,

This letter is written in support of the Coosa-Alabama River Improvement Association's efforts to improve the Alabama River as a viable waterway. We are located on the Alabama River in Montgomery, Alabama.

Our operations consist of receiving barges of dry fertilizer, unloading the material into our facility, and then redistributing it to fertilizer dealers throughout Alabama. As you can see, our interest in the Alabama River is very extensive and justifiable.

We receive an average of 30,000 Tons of product per year. This figure has remained stable or increased over the past five years. In 1986, however, there were occasions when the river was too low for barges to travel, and business was lost. We need to feel secure in the reliability of the channel before any further thoughts of expansion can be considered.

During the history of our business we have found that waterways provide the efficient transportaion productivity which tends to lower inflation, as well as a competitve alternative for shippers. Any funding requests for FY88 are justified by sincere concern for the future and needs expressed by those of us directly affected by the Alabama River.

Your consideration of this matter will be greatly appreciated.

STATEMENT OF THE MONROE COUNTY (ALA.) COMMISSION

Dear Senator Johnston:

The Monroe County Commission, Monroe County, Alabama, supports the Coosa-Alabama River Improvement Association's requests for FY88 to maintain and extend the waterway from Rome, Georgia, to the port of Mobile, Alabama.

It is respectfully requested that the Congress authorize the design and engineering work to resume on the Coosa Project, which was suspended in 1983. The full economic impact will not be realized until both the Coosa and Alabama Rivers are made navigatable from Rome to Mobile.

It is further requested that rehabilitation and modification of the dredging profile for the Alabama River channel below Claiborne be continued. Federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery should be continued. For Mobile to become the deep water port that it should be to accommodate the development of the important river system, it is important to maintain the schedule for the Mobile Harbor Deepening Project.

STATEMENT OF GADSDEN-ETOWAH CHAMBER OF COMMERCE

The Gadsden-Etowah Chamber of Commerce, representing more than 850 businesses in Etowah County, encourages you to commit to the full development of the Coosa River to realize the potential of northeast Alabama. As a member of the Coosa-Alabama River Improvement Association and as the administrative agency of the Coosa River Action Council, the Chamber supports the maintenance and extension of the entire Coosa-Alabama River waterway. We strongly urge a continuation of funding and specifically ask for the resumption of design and engineering work on the Coosa project which was suspended in 1983.

Not only would the completion of the Coosa-Alabama waterway be a tremendous boost to the employment and economy of this region, as shown by completed waterways such as the Arkansas and the Gulf intracoastal waterways, it would also be of direct benefit to one of the Gadsden area's major employers -- Gulf States Steel. The officials of Gulf States Steel indicated that they could "substantially lower" transportation costs by using the Coosa to receive valuable raw materials and ship finished product.

The Chamber is ready to assist both the state and federal government in making this waterway development a reality. Your consideration and action is needed and will be most deeply appreciated.

STATEMENT OF DRAVO BASIC MATERIALS CO., INC.

Dear Senator Johnston:

We respectfully request your consideration and approval of the following projects on the Coosa-Alabama River System for fiscal year 1988:

1) Resume Coosa River Navigation Project.
2) Continued rehabilitation of training dykes and modification of dredging profile for the Alabama River Channel below Claiborne Lock and Dam.
3) Operation and maintenance - Claiborne Lock and Dam.
4) Operation and maintenance - Millers Ferry Lock and Dam.
5) Operation and maintenance - Robert F. Henry Lock and Dam.
6) Operation and maintenance - reservoirs and hydro-electric stations.
7) Operation, maintenance, improvements and deepening of Mobile Harbor.

We support the testimony of the Coosa-Alabama River Improvement Association and we join the efforts of its membership to maintain and extend the waterway to make the benefits of low cost, energy efficient water transportation available to a broader economic base.

Dravo Basic Materials Company, Inc. is one of the leading producers of construction raw materials and aggregates on the Gulf Coast. We rely extensively on the waterways of Alabama, Florida, Louisiana, Mississippi and Texas for production and delivery of our products. In 1986 we produced and moved via Alabama waterways over 950,000 tons of sand and gravel. We also transported over 180,000 tons of limestone as well as significant quantities of other products. Our projections for 1987 are:

Sand and Gravel	1,250,000 tons
Other	350,000 tons

Dravo Basic Materials Company, Inc. operates a fleet of 23 boats, 85 barges and 7 dredges. We maintain a large terminal and handling facility on McDuffie Island in Mobile, Alabama in addition to numerous support facilities throughout South Alabama and the Gulf Coast.

The maintenance of authorized project dimensions is essential for the efficient, orderly production and delivery of materials throughout the waterway system. Drought conditions in 1986 resulted in low flows on the Alabama River and a suspension of navigation for a period of over seven weeks. This condition emphasizes the need for the Corps to have the capability of overcoming extreme conditions in meeting its assigned task of operating and maintaining an efficient, orderly waterway system. In order to provide this capability, it is imperative not only that the Army Corps of Engineers be provided with the appropriations as per their budget requests, but also with the additional funds required to insure the Corps has the flexibility and capability to fully realize the potential of the Coosa-Alabama River System and the Port of Mobile.

We sincerely appreciate the Committee's faith in the future of the great waterway systems of the State of Alabama and welcome its continued support of these vital projects.

STATEMENT OF CAMDEN, ALA.

Dear Sir,

I very much support the request of our association for FY88,and I am just a small part of a effort to continue to maintain and extend our beautiful waterway. We would like to see the engineering work begin on the Coosa project again, and also see Federal maintenance and operation continue on the Alabama river waterway from Mobile to Montgomery.

We all know freight by water makes transportation costs become more competitive , thereby lowering freight costs and making inflation come down. We also know that it will help our farm economy immensely and also aid tremendously in the transportation of forestry products.

Please give these things your utmost attention.

STATEMENT OF GADSDEN, ALA.

DEAR SENATOR JOHNSTON:

I'M WRITING TO ASK FOR YOUR SUPPORT OF FY88 INVESTMENTS ON NAVIGABLE WATERWAYS MADE ON THE ASSUMPTION THAT FEDERAL MAINTENANCE OPERATION OF THE WATERWAYS WOULD BE CONTINUED.

WATERWAYS PROVIDE EFFICIENT TRANSPORTATION PRODUCTIVITY THAT LOWERS INFLATION AND REDUCES NATIONAL DEFICITS. I WOULD STRONGLY ENCOURAGE YOU TO RESUME DESIGN AND ENGINEERING WORK ON THE COOSA PROJECT, WHICH WAS SUSPENDED IN 1983.

STATEMENT OF FIRST ALABAMA BANK

First Alabama Bank-Cherokee County Office has pledged its support to the Coosa-Alabama River Improvement Association, Inc. We feel there is a need for resumption of the design and engineering work on the Coosa Project, which was suspended in 1983.

Waterways provide efficient transportation productivity along with lowered freight rates which are in the national interest as manufacturers and farmers compete to improve their balance of payments.

Studies of completed waterways such as the Arkansas, the Gulf Intercoastal Waterway, and also of the planned Coosa Project, show that the returns fully justify the investment.

I support this project and urge you to do likewise. Thank you in advance for your efforts.

STATEMENT OF J.L. JAMES & CO.

Mr. Chairman:

T. L. James & Company, Inc. is a diversified construction company that owns and operates seventeen hydraulic cutter-suction dredges that maintain the inland waterways of the Gulf and Atlantic Coast Regions. Our Company supports the funding request by the Coosa-Alabama River Improvement Association, Inc., for the Army Corps of Engineers' Operations and Maintenance Budget in fiscal year 1988. Our reasons are outlined in the following paragraphs.

The Army Corps of Engineers' Operations and Maintenance Budget is an important barometer of the economic health of our company, as well as the national dredging industry. "O & M" funding on the Alabama River navigation system funds an important segment of our business in that region. The funding also provides a more efficient navigation system that reduces the cost of the work we perform for the Corps.

I would like to focus your attention on the fact that navigation and dredging interests are only two segments of the regional economy that are enhanced by "O & M" funding. Approximately 75% of the revenue from a dredging contract is funneled into the economy of the local community. An additional 10% of our revenue benefits the economy of our home port. Much of the labor employed on our equipment is provided from the local workforce of nearby communities. A payroll account is usually handled by a local bank. Local fuel and hardware suppliers receive approximately half of our revenues in the form of local purchases of those items. It is clear that "O & M" expenditures enhance the health of other commerce in the economy of the communities affected, as well as provide for more efficient and economical navigation.

A safe and reliable Alabama River transportation network is of paramount importance to the waterborne commerce on that network, as well as the health of the regional economy in general. I hope I have clearly outlined for you, from our perspective, the importance to us of the efforts put forth by the Coosa-Alabama River Improvement Association, Inc. concerning the Army Corps of Engineers "O & M" budget for fiscal year 1988.

STATEMENT OF ETOWAH COUNTY (ALA.) COMMISSION

Dear Senator Johnston:

I would like to take this opportunity to express my wholehearted support of the Coosa River Navigation Project, and my support of the Associations' testimony. I feel that this project would have a great impact on the economy and employment in all of Alabama, especially improving the Mobile Harbor. This waterway system could be part of the solution to solving the sick economy in Alabama.

STATEMENT OF JAMES T. JORDAN

This letter is in support of the waterways to provide efficient transportation productivity that will lower inflation and reduce our National deficit.

We desperately need to lower freight rates as manufacturers and farmers compete and balance payments.

Studies of completed waterways such as the Arkansas, the Gulf Intercoastal waterways and also the completed Coosa project shows that the return justifies the investment.

We live in a rural farming community and we certainly need lower rates and some help in transporting farm products at a cheaper freight rate.

We appreciate all that you do for us.

STATEMENT OF ALABAMA POWER CO.

Dear Senator Johnston:

The Coosa-Alabama Waterway is an important link in the nation's infrastructure, and is a key element in the continued economic health of the central and southern regions of our state. A dependable water transportation system is an essential ingredient to attracting new industries to these areas as well as insuring the economic viability of those industries now using this waterway.

Alabama Power Company supports the Coosa-Alabama River Improvement Association request for FY88 funding to continue operation and maintenance of this important waterway. Significant private investments have been made along the Alabama River waterway, and these investments were made on the basis of continued Federal operation and maintenance of the system. Continued rehabilitation of existing training dikes and construction of additional dikes as well as modification of the dredging profile of the Alabama River channel below Claiborne Lock and Dam should be priority items.

Another project of importance to the entire State of Alabama is the deepening of Mobile Harbor. The Phase I dredging which is scheduled to begin in July, 1987 will be the first step in making the harbor suitable to accommodate the largest of ocean-going vessels. The improvement of this harbor will open the world's markets to the industries of Alabama, and we urge that the necessary funding be made available to allow timely completion of this project.

Alabama Power Company is a member of the Association, and we support the Association's efforts to improve the waterway and to insure its continued efficient operation.

RESOLUTION OF FLOYD COUNTY, GA.

THAT WHEREAS, the Congress of the United State is again considering appropriations for the Fiscal Year 1988 for further work to make navigable the Alabama-Coosa River System from Mobile, Alabama to Rome, Georgia; and,

WHEREAS, the Coosa River Navigation Project is of particular concern to Floyd County, Georgia and this Board wishes to express its wholehearted support for the objectives of the Coosa-Alabama River Improvement Association; and,

WHEREAS, we urge your favorable consideration of the U. S. Corps of Engineers Fiscal '88 appropriation for this project; and,

WHEREAS, the operation and maintenance of the important upstream reservoirs and hydro-power plants at Allatoona and Carters Lake in Georgia are invaluable hydroelectric generating facilities; and

WHEREAS, with the high unemployment in our area, and surrounding areas this project is even more vital to our sick economy and an investment in our future economic strength.

NOW, THEREFORE, BE IT RESOLVED, this this Board of Commissioners wish to go on record in support of the Coosa River Navigation Project.

Done in open meeting this 10th day of March, 1987.

STATEMENT OF TATE, HEINZ & ELLIS, INC.

Dear Senator:

We regret that we cannot attend your meeting in person on March 30 in Washington. However, we are heartily in favor of the project sponsored by the Coosa-Alabama River Improvement Association, Inc. This has been our project for a quarter of a century and we think it is vital to the economy of our state. We feel sure that you will give it your continued backing.

Our Senator, John Tyler Morgan, of Selma, Alabama worked on this project over a century ago and we know that you will continue to follow through.

STATEMENT OF CENTRAL BANK OF THE SOUTH, MONTGOMERY, ALA.

Dear Senator Johnston:

I sincerely regret that it will not be possible for me to appear personally before your Committee on March 30 in support of the delegation appearing in behalf of the Coosa-Alabama River Improvement Association. However, with your permission, I would like to submit the following as indicative of my interest and support for the project which they represent.

In both my private and professional activities I have a keen interest in the further industrial development of Alabama and our southeastern region. I also realize that despite the progress achieved in recent years we still have much to do and that we are needful of the consideration and assistance of those of like mind at regional and national level such as yourself and the members of your Committee.

I also understand the vital importance of water resources and transportation in the development and enhancement of the economy of any region. This knowledge convinces me of the viability of the Coosa-Alabama project and the impact it will have on the economy of the area. All of this comes at a time during which our nation, our region and our states are exerting every effort to achieve and maintain an economic edge in highly competitive environment. I believe that the continued development of this waterway will materially assist in this effort. It will accelerate the flow of commerce, lessen cost of transportation, contribute to the development of a relatively virgin area and would serve to enhance the nation's economy as a whole.

For these and many other reasons not recounted, I unreservedly support the position of the Association and its requested appropriation for FY '88 so as to ensure that the impetus previously established will not be lost. I am confident that the state of Alabama as well as the private sector of our economy stands ready to pledge support to this effort once convinced that the support of your Committee and of the Congress is forthcoming.

Specifically, my colleagues and I would respectfully suggest the resumption of design and engineering work on the Coosa Project; the continued federal maintenance and operation of the Alabama River Waterway from Mobile to Montgomery and continued maintenance and improvement of the Mobile Harbor.

Again, my regrets at not being able to be present for this occasion and my sincere request and anticipation that you will act favorably on the proposals of the delegation.

RESOLUTION OF ST. CLAIR COUNTY (ALA.) COMMISSION

WHEREAS, the Congressional Appropriations Subcommittees will again be held on March 30, 1987, in Washington, D. C.; and

WHEREAS, the Coosa-Alabama River Improvement Association, Inc. has three main objectives to be considered this year as follows: (1) maintaining the Alabama River as a viable waterway; (2) deepening the Mobile Harbor to accomodate the largest ocean-going vessels; and (3) opening the Coosa River for navigation;

NOW THEREFORE BE IT RESOLVED That the St. Clair County Commission goes on record in continuing to support the Coosa-Alabama River Improvement Association requests for FY88; and

FURTHER, That copies of resolution be made available to each of the Sub-committees on Appropriations for Energy and Water Development.

Adopted this 1st day of March, 1987.

STATEMENT OF MONTGOMERY COUNTY (ALA.) COMMISSION

Dear Mr. Chairman:

The Montgomery County Commission continues to closely follow the development of the Coosa-Alabama River project which was originally authorized by the Congress in 1945. We believe that the benefits which accrue to the citizens of this region, and to the nation, fully justify the complete construction and operation of this economical waterway.

We fully support the testimony provided by the Coosa-Alabama River Improvement Association. For many years this group has represented us and they accurately reflect our feelings of support for this waterway project.

Of particular interest to us is funding which would permit resuming the design and engineering work on the Coosa Project, which was suspended in 1983.

Also, we feel that the requested appropriation to continue the operation and maintenance of the upstream reservoirs and hydropower plants at Allatoona and Carters Lake in Georgia is essential for the continuity of this project.

We urge your favorable consideration of the recommended appropriations. Adequate funding as requested is necessary to insure that progress is made for further development of the system and to properly operate and maintain the existing portion. Similar information has been sent to Honorable Tom Bevill, Chairman, House Subcommittee on Appropriations for Energy and Water Development, House of Representatives, regarding this matter.

STATEMENT OF ALABAMA TOMBIGBEE REGIONAL COMMISSION

Dear Chairman Johnston:

I am sorry that I an unable to appear in person today before this distinguished Subcommittee. However, I do appreciate the opportunity to submit a statement on behalf of the Coosa-Alabama Improvement Association, Incorporated.

The Alabama-Tombigbee Regional Commission is a multi-county planning and development commission located in southwest Alabama. Its member governments include 10 counties and 47 municipalities, and a population of 225,600 residents of which 51% are Black. Our communities are small, with all but one under 7,000 people. In 1982, our per capita income ranged from a low of $5,490 to a high of $7,800, considerably below the state average of $8,647. Our state and nation are suffering from unprecedented unemployment rates. The Alabama-Tombigbee Region alone presently has an unemployment rate of 15.4%. Federal investments that create jobs are needed as much as Federal job-training programs for jobs that may not exist. This would help greatly to alleviate the dire need for employment opportunities in our region and state.

It is vital that the Alabama River remain a viable waterway if our region is to overcome some of its economic problems. It is also of paramount importance that the Mobile Harbor be maintained and improved in order that it can accomodate the largest ocean-going vessels.

Support for these projects by this Subcommittee is desperately needed. The potential this project offers our region is tremendous. We urge Congress to realize the need for and support the Coosa-Alabama River Improvement Association's request for Fiscal Year 1988 funding.

Any consideration that you can render will be deeply appreciated.

STATEMENT OF RAGLAND, ALA.

Dear Sir:

As Mayor of the Town of Ragland, I regret that I am unable to be with the delegation. I strongly support the Association request for FY88 and am a part of a collective effort to maintain and extend the waterway.

It is my interest to see the design and engineering work on the Coosa Project resumed, which was suspended in 1983.

It is also a proven fact waterways provide efficient transportation productivity that lowers inflation and reduces national deficits. Studies of completed waterways such as the Arkansas, the Gulf Intracostal Waterway, and also of the planned Coosa Project, show that the returns fully justify the investment.

Thanks for your consideration.

STATEMENT OF GULF STATES STEEL

Gulf States Steel, Inc., representing more than 2,000 jobs in Etowah County, encourages you to commit to the full development of the Coosa River to realize the potentials of Northeast Alabama. As a member of the Coosa-Alabama River Improvement Association, the Company supports the maintenance and extension of the entire Coosa-Alabama River Waterway. We strongly urge a continuation of funding and specifically ask for the resumption of design and engineering work on the Coosa River Project which was suspended in 1983.

The completion of the Coosa-Alabama Waterway would be a tremendous boost to the employment and economy of the region as shown by completed waterways, such as, the Arkansas Waterway and the Gulf Intercoastal Waterway. It would also be of benefit to Gulf States Steel. We could lower transportation costs substantially by using the Coosa River to receive valuable raw materials and to ship finished products.

Your consideration and action is needed and will be most deeply appreciated.

STATEMENT OF RAINBOW CITY, ALA.

Dear Senator Johnston:

Once again this year I will be attending the hearing on FY88 Waterway Appropriations for the Coosa River Improvement Association on March 30, 1987.

I continue to support the Association in whatever way I can and request that you consider their request for FY88 funding to maintain and extend the waterway if possible.

I think it is imperative that we continue maintenance and operation of the Alabama River Waterway from Mobile to Montgomery. Also, of top priority is the continued operation and maintenance of the upstream reservoirs and hydro-power plants at Allatoona and Carters Lake in Georgia and maintaining the schedule for the Mobile Harbor Deepening Project.

I know you will continue to do a good job in your commitment to the nations waterways because you see the importance of lowered freight rates wherever possible. I appreciate all you do for our beloved State of Alabama.

I look forward to seeing you in Washington on March 30th........

STATEMENT OF SELMA AND DALLAS COUNTY (ALA.) CHAMBER OF COMMERCE

Please know we continue our unwavering support of the Coosa-Alabama River Improvement Association in its efforts to fully develop the Coosa-Alabama Rivers Corridor from Mobile to Rome, Georgia.

Development of industry along this waterway is essential to many counties, some of which have unemployment rates over 16 percent. A river system which is guaranteed open to traffic not only enhances industrial development, but at the same time can prove invaluable to shipment of agricultural products as well as outstanding recreation capabilities.

Selma and Dallas County long have been at the center of this development. The dream can not fully be realized until other improvements are completed.

We look forward to your continued support of these appropriations.

STATEMENT OF ALABAMA STATE DOCKS DEPARTMENT

Dear Senator Johnston:

The Alabama State Docks' Inland Docks Division owns three inland public ports on the Alabama River and actively supports Coosa-Alabama River Improvement Association's efforts to promote, maintain and improve the navigable waterway that presently exist and recommend consideration of resumption of design work on the Coosa project. We support the Coosa-Alabama River Improvement Association's recommendations presented for Fiscal Year, 1988 spending to accomplish these ends.

The State of Alabama, through its Inland Docks Division, has expended over $3,000,000 Million Dollars to provide Alabama and Southeast Industry access to the reliable, safe and economical waterway transportation presently available on the Alabama River. Several industries are dependent on economics offered by this efficient waterway transportation system.

We feel every effort should be made to continue to maintain and improve our present system and expand to offer similar services to other industrial areas on the Coosa.

STATEMENT OF AMSOUTH BANK N.A.

As you are probably aware, the State of Alabama is blessed with an abundance of natural resources. These resources include its forests, land, minerals, waterways, and its people. In order for our state to continue to grow and prosper these resources must be carefully developed in a systematic manner. In this regard I am asking for your support on the appropriations that affect a number of Alabama's waterways. These include, but are not limited to, the design phase on the Coosa River project, maintenance of the Alabama River, and the deepening of the Mobile ship channel.

By supporting these projects, we in Alabama can continue the work that has already begun. Alabama is moving forward in the area of international trade and investment and the waterway assets we have are a vital part of that international development. I ask that you help us keep the momentum we have going in our state by supporting the related appropriations.

STATEMENT OF THE ANNISTON STAR, ANNISTON, ALA.

Although Anniston is not on the Coosa River per se, we have always felt that the river development would be a great asset to the county, the state and the nation.

Our newspaper has supported this activity for more than 50 years. We further must support the Coosa-Alabama River Improvement Association, Inc., request for FYI 88. This is part of a collective effort to maintain and extend the waterways. We should also resume design and engineering work on the Coosa project, which was suspended in 1983.

Further, we should continue rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne. We also should continue to maintain and improve Mobile Harbor.

Further, extensive commitments to the private investment on navigable waterways have been made on the assumption that federal maintenance and operation of the waterways would be continued and, as stated before, the public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole.

Thanks for your assistance in this matter.

STATEMENT OF FIRST ALABAMA BANK

Dear Senator Johnston:

This statement is rendered in behalf of the Coosa-Alabama River Improvement Association and requests for funding projects on both the Coosa and the Alabama rivers.

In 1983, the U. S. Army Corps of Engineers suspended design and engineering work on the Coosa project. We request that this work be resumed and funded in the FY '88 budget. Continued rehabilitation and added construction of training dikes and other modification is necessary on the Alabama River channel. Problems of navigation on the lower river have continued to plague us for many years. Remedial work needs to be done to attain greater efficiency of navigation. Operations and maintenance funding is requested to keep these programs going.

The Coosa-Alabama River Waterway continues to play a vital role in the economy of the region and the State of Alabama, serving industry and agriculture. We support the Association request for FY '88.

STATEMENT OF UNION CAMP CORP.

Dear Senator Johnston:

As a member in good standing of the Coosa-Alabama River Improvement Association, Union Camp Corporation supports the association's position regarding the maintenance and development of this river system, especially as it pertains to the Alabama River from Montgomery to Mobile.

Presently, we do not use the river as a means of transporting raw material, finished goods or chemicals used in our manufacturing process.

However, with development of the Tennessee-Tombigbee Waterway and the increasing pressures on rail and truck transport, there may be a future need for transporting materials on the Alabama River system.

Appropriations to improve and maintain the barge traffic capability on the river south of Montgomery to Mobile is in our future best interest and we urge your support of the Coosa-Alabama River Improvement Association's request with respect to this situation.

STATEMENT OF GOODYEAR TIRE & RUBBER CO.

The Goodyear Tire & Rubber Company has supported the development of the Coosa River project from its inception and is still a staunch supporter for the ultimate completion.

When this project is completed, it will be an investment in the Southeast and all the area along the river will realize ecomonic gains, as well as Goodyear Tire & Rubber Company.

STATEMENT OF CHEROKEE COUNTY (ALA.) COMMISSION

The Cherokee County Commission would like to request the Alabama Coosa River Navigation project be given your every consideration. We feel this project would be a boost to the economy of our area and the nation. It would provide jobs now and in the future.

As you are aware, we are a very strong agricultural region and this would give assistance to this vital but struggling segment of our economy.

WARRIOR-TOMBIGBEE WATERWAY AND PORT OF MOBILE, ALA.

STATEMENT OF OFFA NICHOLS, PRESIDENT, WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

Senator JOHNSTON. Next, we have the Warrior-Tombigbee Development Association with Mr. Offa Nichols, president.

Mr. NICHOLS. Thank you very much, sir. While we have more waterways in Alabama than anybody in the United States, our air service is pretty bad, so some of the folks have already gone back.

Mr. Stevenson from the Governor's Office will make a few remarks.

Mr. STEVENSON. Again, another waterway that is very important and moved more commerce than any of the other waterways, and it is very important to the state.

Mr. NICHOLS. Thank you.

We have a formal statement already submitted with a number of attached statements from business interests all over the state for the record. I would just summarize very briefly.

We would like to be your case in point when you point out, sir, how the water resource program can work and does work if it is properly followed. When our group began its partnership with the Congress and the Corps in 1951, annual tonnage on the Warrior-Tombigbee was about 2½ million, but studies authorized by the Congress showed great potential through modernizing the project, projecting 8 million tons by

1980. What happened? We got the promised traffic of 8 million tons, but we got it in 1966, not 1980.

In 1980 there were almost 17 million tons, and in 1984, over 19 million tons. Local investment grew. For example, just in the past 6 years, over $1 billion by the coal interests, more than $1 billion by the steel industry in Birmingham and Tuskaloose, with another $200 million now in progress in Birmingham.

Next year, when this investment is completed, United States Steel in Birmingham, 4 million tons more traffic will move up and down the Warrior-Tombigbee Waterway. It is interesting to note that one single local agency, the Alabama State Docks, has, over the past 5 or 6 years, increased over $250 million in expanding and modernizing their facilities because of the benefits of the waterways in Alabama.

This is more money than the federal investment has invested in every lock and dam on the Warrior-Tombigbee Waterway.

Truly, we are talking about investment money, seed money, that pays off many times.

Thanks to the Appropriations Committees, our newly authorized Oliver Lock at Tuskaloosa, Ala., is already underway. With your help, we can move out at an optimum rate.

As far as the funds for 1988, the budget contains $22 million to continue construction of the new Oliver lock. This will support efficient and cost-effective continuation of the program, and as you very eloquently stated earlier, any delay will be to delay the public benefit and cause increased costs. We expect to navigate to that new lock in 1991.

On the O&M side, we need some help beyond the $11.8 million in the budget request. That comes out to be an average, taking into consideration that we have had 2 super years with no flooding which is most unusual, and, therefore, very little shoaling, sedimentation, and a reduced dredging program. We do not believe the $11.8 will support us this year because of the weather conditions we are already experiencing.

There are also some additional programs underway and have been, for several years, to improve the river and reduce future maintenance costs. We need some additional funding within the Corps' capability to cover those costs.

We thank you for the confidence you have reflected by your support in the past. We believe we have managed your investment well; that the project has confirmed your wisdom. We pledge our best efforts to continue to justify your support.

Senator JOHNSTON. Thank you very much, Mr. Nichols. I hope you do have the success for the project which I expect. We fought very hard for Tennessee-Tom.

Mr. NICHOLS. I am sure you know that that river originates in Mr. Bevill's district. [Laughter.]

Mr. NICHOLS. We claim little credit.

Senator JOHNSTON. Thank you very much, Mr. Nichols.

[The statements follow:]

STATEMENT OF THE WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

SUMMARY OF THE REQUEST

The following is a summary of the funding items for the U.S. Army Corps of Engineers for FY88 which bear on the needs of the Warrior-Tombigbee Waterway, and which we ask the Committee to approve:

Warrior-Tombigbee Waterway	
Operations & Maintenance Funds included in Corps' Budget Request	$11,756,000.
Funds for Additional Capability for O&M, not included in Corps' Budget Request	6,750,000.
Total O&M Funds Required	$18,506,000.
Funds for New Construction, included in Corps' Budget Request - Oliver Lock	$22,000,000.
- Jackson, AL	1,300,000.
Total New Construction Funds Required	$23,300,000.

Other needs allied to the Warrior-Tombigbee are:

Mobile Harbor	
Operations & Maintenance Funds, included in Corps' Budget Request	$7,960,000
Funds for Additional Capability, O&M	1,135,000.
Total O&M Funds Required	$8,095,000.
Funds for New Construction, included in Corps' Budget request	$16,200,000.
Total New Construction Funds Required	$16,200,000.

We wish to highlight the item identified above as Additional Capability. Since funds for this item were not included in the Corps' Budget Request, it is not clear to us whether the Committee has been informed of the essentiality of funding for certain of these approved Capabilities. We emphasize the need for additional O&M Capability funds if we are to have an adequate current year program, and to support on-going projects designed to improve safety and efficiency, and to reduce future costs.

Written statements of support are attached.

I am Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association. Our members represent a broad cross-section of shippers, carriers and the general business community in the Warrior-Tombigbee basin in Alabama, and eight other states. The Association was formed in 1951 to work for the redevelopment of the Warrior-Tombigbee Waterway System. Construction of the original 17 locks and dams began in the late 1870's and was completed in 1915. The navigation system provided by these locks and dams had gradually deteriorated and by the mid-1950's the annual tonnage had levelled off at 2.5 million tons due to the condition and limited capacity of the obsolete locks.

The Association's objectives have been not only the replacement of the outmoded locks and dams and improvements in the Mobile Bay area, but also the appropriation of sufficient O&M funds to support efficient and reliable navigation. Congress has generally appropriated the necessary funds to support these objectives. There are now only six locks in the 400-plus miles from the head of navigation, located northwest of Birmingham, to the Port of Mobile. During the studies which resulted in this redevelopment, it was projected that by 1980 the Waterway would carry some 8 million tons. These levels were reached in 1966, and by 1980 twice the projected tonnage was being moved on the Waterway. Despite the subsequent economic downturn, traffic increased to a peak of 19.6 million tons in 1984.

The Warrior-Tombigbee Waterway now has a system of modern locks and dams with the exception of one lock, William Bacon Oliver. While prior to the late 1970's the waterway had operated in a generally efficient and reliable manner, we now have a different set of circumstances. These circumstances reflect not only the impressive growth up to now and the ravages of time and the elements, but even more the current economies of world markets. Some estimates indicate that 10% of our nation's coal reserves are located in the Warrior Basin. Most of the coal exported through the Port of Mobile arrives there by barge from the Warrior Basin, and over 7 million tons of coal move via this waterway to the electric generating plants in our area. Our mines continue to produce substantial export coal and the Warrior-Tombigbee is essential to their market position. Farmers from Alabama and Mississippi ship their grain to Mobile for export. These farm families are dependent on the waterway for efficient transportation of their products, more important than ever in today's competitive world markets.

Shipments of ore, steel and related products will increase by several million tons when the new and modernized manufacturing facilities re-open at U.S. Steel in 1988. The continued efficiency and modernization of the waterway were important in the recent decision by U.S. Steel on these further investments at the Fairfield facilities. A new mini-mill has been built near Tuscaloosa - the first such new facility to be built in this country in 19 years. While we say mini-mill, it represents an investment of $100 million and is on the leading edge of technology. The efficiency and reliability of the waterway will be significant factors in the competitiveness of these new facilities. Thousands of jobs hang in the balance. We believe we are priviledged to have ringside seats at the re-birth of the steel industry in this region -- with the Warrior-Tombigbee being a major contributor.

There are many other commodities moving on the waterway, such as other ores, crude and fuel oils, other steel products, chemicals, aggregates and now, by substantial increased tonnages of wood products. Related industries, though still impacted by the competitive international markets have plans to grow and modernize.

These ever-increasing demands require that the Warrior-Tombigbee operate at peak efficiency on a full-time basis. Our operational efficiency has been seriously impaired by the bottleneck caused by the one remaining substandard lock -- Oliver on the Warrior River. Oliver, a pre-World War II lock, is 95-460 feet and is smaller than the other five, all of which are the new standard size of 110x600 feet. This necessitates tows being broken apart and utilizing double lockages to pass through. The replacement of Oliver has been authorized and construction is underway. Approval of the $22.0 million in construction funds will permit the Corps to proceed in an orderly and efficient manner. Meanwhile, it is even more important that the remainder of the waterway operates at full efficiency.

Because of the waterway, several billion dollars have been invested by industry, farmers and other governmental agencies, providing thousands of jobs. The Alabama State Docks' $250 million expansion program is complete and this facility now offers the most advanced coal handling technology available in this country. Similar improvements have been made for grain handling and bulk materials. It is interesting to note that the investment by this single local agency generally matches the federal investment in building all the locks and dams on the entire waterway. We are asking for federal investments that pay off many fold.

These are but examples of how this waterway is so central to the economy of this entire area, impacting both domestic and international markets. Attached with this statement are letters from our members further highlighting this importance. I hope you will note the wide range of interests represented by these statements. Included are financial institutions; public utilities; both deep water and inland port facilities, representing both public and private ownership; coal mining, both deep and surface; manufacturers; agri-business; suppliers; constructors; and, of course, marine interests. These represent a broad cross-section of the economic heartbeat of an entire region.

With respect to the actual funding needs, we support the Corps' request for O&M funds for the Warrior-Tombigbee. We are concerned, however, that the requested level of funding, $11.8 million, will not support the kind of O&M program essential to keeping the system reliable and efficient. The funding requested represents less than the average requirement over the past several years for day-to-day operations, and would be unlikely to support normal and efficient operations during FY88. Nor will they permit the continuation of on-going programs designed to correct deficiencies of long standing and to handle our increased traffic on an efficient, long-term basis. Work is being done to reduce sedimentation and shoaling to reduce O&M costs in future years. Non-structural measures are underway which will increase efficiency and traffic flow through several reaches of the Tombigbee, thereby enhancing its ability to handle the increased traffic. If the progress on these well thoughtout and cost effective projects is to continue most efficiently, the shortage is some $6.7 million. In our area, where unemployment is again rising and with basic industry still struggling to get back on its feet and regain a competitive position in tough world markets, this short fall would be devestating.

We support the New Construction funds in the amount of $22.0 million to continue the construction of the new Oliver Lock, and funding of $1.3 million for improvements at Jackson, Alabama. Through the wisdom and steadfast support of the Appropriations Committee, it has been possible to accomplish the planning, design and now initial construction at Oliver on an orderly and efficient basis. Inclusion of the entire Federal share of $11 million for Oliver Lock is critical as this will be matched by an equal amount from the Inland Waterway Trust Fund. Therefore, any reduction would be doubly detrimental.

Summary of Funds Requested

Warrior-Tombigbee Waterway	
Operations & Maintenance Funds included in Corps' Budget Request	$11,756,000.
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Total New Construction Funds Required	$23,300,000.

Other needs allied to the Warrior-Tombigbee are:

Mobile Harbor	
Operations & Maintenance Funds, included in Corps' Budget Request	$7,960,000
Funds for Additional Capability, O&M	1,135,000.
Total O&M Funds Required	$8,095,000.
Funds for New Construction, included in Corps' Budget request	$16,200,000.
Total New Construction Funds Required	$16,200,000.

We believe the Warrior-Tombigbee Waterway is a classic example of the most positive aspects of the Civil Works Program. The Congress saw the potential and supported its program. And now the project continues to demonstrate its worth, having more than doubled the projected tonnage and benefits. I wish to emphasize that the funds which we seek are of its investment category, not expense. This is seed money, spawning reinvestment many times over.

We fully endorse and seek the approval of these items. I, as President of the Warrior-Tombigbee Development Association, our other Officers, our Board of Directors, and our Members appreciate the consideration of the Chairman and members of this Subcommittee and its staff have shown us over the years. We ask for your support once again.

We are attaching additional written statements of support, along with a witness list, representing a cross-section of business, industry and the public.

Thank you for your consideration. We stand ready to answer questions.

WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

LIST OF WITNESSES

The Honorable Howell Heflin - Senator, Alabama
The Honorable Richard Shelby - Senator, Alabama

The Honorable Sonny Callahan - Member of Congress, Alabama
The Honorable Bill Dickinson - Member of Congress, Alabama
The Honorable Ben Erdreich - Member of Congress, Alabama
The Honorable Ronnie Flippo - Member of Congress, Alabama
The Honorable Bill Nichols - Member of Congress, Alabama
The Honorable Claude Harris - Member of Congress, Alabama

Representing Governor Guy Hunt:
Mr. Walter Stevenson - Alabama Dept. of Economic & Community Affairs

Mr. Sheldon L. Morgan - Chairman, Warrior-Tombigbee Development Association
Senior Vice President, First Alabama Bank, Mobile, AL
Mr. N.J. Barchie, Jr. - Vice Chairman, Warrior-Tombigbee Development Association
President, Warrior & Gulf Navigation Company
Mr. Offa S. Nichols, Jr. - President, Warrior-Tombigbee Development Association
Mr. E.G. Browning - Director of Traffic, Alabama State Docks Department
Mr. R.A. Guthans - President, Tenn-Tom Towing, Inc.
Mr. John Mixon - General Manager, Warrior & Gulf Navigation Company
Mr. Tim Parker, Jr. - Executive Vice President, Parker Towing Company
Mr. Leon Torbert - Vice President, Dravo Basic Materials
Mr. Phillip Wiedmeyer - Manager-Governmental Affairs, Alabama Power Company

WASHINGTON APPROPRIATIONS HEARINGS

LIST OF STATEMENTS

Alabama Electric Cooperative, Andalusia, AL
Alabama Power Company, Birmingham, AL
Alabama State Docks Department, Mobile, AL
American Cast Iron & Pipe Co., Birmingham, AL
American Commercial Barge Line Company, Harahan, LA
Buffalo Rock Company, Birmingham, AL
Chicago Bridge & Iron Company, Birmingham, AL
Dravo Basic Materials, Inc., Mobile, AL
Drummond Coal Company, Jasper, AL
First Alabama Bank, Mobile, AL
Gulf Power Company, Pensacola, FL
Harbert International, Birmingham, AL
Hunt Refining Company, Tuscaloosa, AL
T.L. James & Company, Kenner, LA
Lapeyrouse Grain Corporation, Mobile, AL
Mississippi Power Company, Gulfport, MS
Parker Towing Company, Tuscaloosa, AL
South Central Bell, Birmingham, AL
Southern Company Services, Birmingham, AL
SouthTrust Bank of Alabama, Birmingham, AL
Tenn-Tom Towing, Inc., Mobile, AL
Thompson Tractor Company, Birmingham, AL
U.S. Steel Corporation, Fairfield, AL
Volkert & Associates, Inc., Mobile, AL
Vulcan Materials Company, Birmingham, AL
Jim Walter Resources, Inc., Brookwood, AL
Warrior & Gulf Navigation Company, Mobile, AL

STATEMENT OF THOMPSON TRACTOR CO., INC.

The Warrior-Tombigbee Waterway is of vital importance to Thompson Tractor Co., Inc. Our company is an independently owned Caterpillar franchise and presently serves the northern thirty-nine counties of Alabama.

We presently have 465 employees in our company dedicated to the sale and service of Caterpillar earthmoving machinery, lift trucks, and engines. Our engine division competes for all applications of needed power; direct, standby electrical, marine, and over the road. Our products are found where materials are moved: coal, sand and gravel, grain, chemicals, and manufactured goods.

Our major market, of which Thompson Tractor Co., Inc. has great concern, is coal. This market has been drastically hurt by less expensive domestic and foreign coal. The Warrior-Tombigbee must be continually improved through your funding to keep the Southern coal producers competitive. The majority of this once One Billion Dollar Industry needs cost efficient barge service.

Another industry benefitting from water transportation is pulp, paper and paper products. This is now one of the largest industries in the Southeast with revenues exceeding One Billion Dollars. As the export market expands, so does the need for good water transportation.

I believe the Corps of Engineers budget request is inadequate for needs for 1987. Although the funding will allow work to be continued on the much needed Oliver Lock, monies will be needed for several projects to improve channel efficiency and reduce costs.

Thompson Tractor supports the March 30, 1987 testimony of the Warrior-Tombigbee [illegible] Association. Our water system needs to move ahead in the world market of trade. We pledge our support to the success of this critical waterway.

STATEMENT OF AMERICAN COMMERCIAL BARGE LINE CO.

On behalf of American Commercial Barge Line Company, I would again like to express our continued support of the Warrior Tombigbee Waterway and to the funding of this project during 1987. As active members of the Warrior-Tombigbee Development Association, we at ACBL wholeheartedly endorse the endeavors of the Association and the testimony of its president, Offa S. Nichols, Jr..

For many years we have operated our towboats and barges on the Warrior-Tombigbee river system. Primarily we have transported coal from mines in North Central Alabama through the Port of Mobile, and on to power plants in the Gulf region. A recently developed contract between ACBL and Tuscaloosa Steel Corporation will utilize the Warrior-Tombigbee Waterway to transport their products to markets in Chicago. As you can readily see, much of our past success as well as future planning depend on the continued maintenance, growth and development of this waterway.

In reference to Corps of Engineers funding for 1987, we support the proposed $11.7 million for BWT Operations and Maintenance. However, we share the opinion that "additional capability" funds must be provided to insure the continuation of channel deficiency correction programs. Efforts to reduce shoaling and improve dredging disposal must be continued. This will preserve the efficiency and reliability of the navigational channel, and keep future maintenance costs to a minimum. We also support and urge the approval of the $11 million for construction funds for the completion of the new Oliver Lock and Dam. This addition along with the proposed improvements to the Port of Mobile will, greatly enhance the future of this entire region.

Thank you for the opportunity to comment on this important matter. We believe that money spent on this project will improve the economic health of our country and raise our competitive standing in today's world markets.

STATEMENT OF DRUMMOND COAL CO.

The following is a statement in support of improving the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile.

Drummond Coal Company was founded in 1935 by Mr. Heman Drummond who developed his first mine underground near Sipsey, Alabama. It was a drift mine, angling into a hillside from which men dug and mules hauled the bituminous Appalachian coal. Many of Mr. Drummond's customers were local people who needed coal for home heat. As his sons grew up, they joined him and the family opened their first surface mine using small diesel shovels. Half a century has passed since Mr. Drummond produced his first ton of coal.

Today, Alabama is a major coal producing and exporting state. Drummond Coal Company is the largest surface coal producer, one of the largest coal exporters in the southeastern United States, and one of the top twenty non-captive bituminous coal producers in the nations. Drummond serves metallurgial, utility and specialty coal customers on four continents from mines in six counties in north central Alabama. Drummond Coal Company alone presently employs in excess of 4,500 people with an annual payroll of approximately $120,000,000.

About 90% of the state's coal production, including most of Drummond's, comes from the Warrior Field located in north central Alabama. The Warrior Field or Warrior Basin as it is also known, is a basin-like geological structure covering more than 3,500 square miles and underlying parts of Winston, Marion, Fayette, Tuscaloosa, Cullman, Blount, Jefferson and all of Walker County. The field is cut through by the Warrior River system which has led to the development of mines using water transport.

Alabama's system of riverways offers water transport of national and international destinations via the McDuffie Coal Terminal at the year-round Port of Mobile on Alabama's Gulf Coast. Barging in Alabama is a particularly good way to move coal because of the extent of Alabama's waterways and because of the coal handling facilities available.

Drummond ships this coal from five different coal loading facilities located at various points on the Warrior River system, two of which are company owned and operated. Drummond owns and operates a barge loading facility located at milepost 354 on the Warrior River in conjunction with its Kellerman mining operation. This barge loading facility handles about 1,400,000 tons of production at the Kellerman Mine and 2,000,000 tons of production for the Jim Walter Corporation. Another company owned barge loading facility is located at milepost 401.5 on the Locust Fork portion of the Warrior River in conjunction with Drummond's Short Creek operation. This barge loading facility has the potential to handle approximately 1,000,000 tons per year at Port Birmingham which is located at milepost 399 on the Warrior River.

Obviously, reliance upon Alabama's efficient system of waterways has been a very integral part of Drummond Coal Company's planning and operations to date. Availability of an economical and efficient mode of transportation is important to any industry in getting the product to market; however, because of the national and international markets for coal, efficient transportation modes are even more critically important to the coal industry.

This reliance by Drummond Coal Company on the Warrior-Timbigbee System and the Port of Mobile is seriously threatened by the 1987 fiscal year budget proposals for the Corps of Engineers. Reduced operation and maintenance for the Warrior-Timbigbee would be crippling for the coal industry in Alabama. The amount planned for the O & M money for the Warrior-Timbigbee is inadequate based on past history of the water system. The amount proposed for BWT Operations & Maintenance is $11.8 million. This would probably support the bare bones operations tasks, but would not allow the continuation of the on-going deficiency correction program. For example, actions underway for several years to improve dredging disposal and reduce shoaling would have to be discontinued or terminated. Continuing these programs are critical to the efficiency and reliability of the navigation channel and to the reduction of future maintenance costs. We need the "additional capability" funding.

By transporting its high quality coal product by an available and efficient waterway system, Drummond has been able to compete with other coal exporting nations in a successful manner and has contributed to reducing the current national trade deficit.

Drummond Coal Company is a member of the Warrior-Timbigbee Development Association. We strongly support the testimony given today by Mr. Offa S. Nichols, Jr., President of the Association, and heartily endorse the collective effort of the Association to improve the efficiency and reliability of the Warrior-Tombigbee Waterway. Traffic on the waterway presently represents only a small percentage of the river's ultimate capacity; given the needed improvements to the Oliver Lock and a continued commitment to a federally constructed and maintained inland waterway system are granted. Certainly, the federal investment in the Warrior-Timbigbee River System has paid dividends many times over with the improved economic development is the area which the Warrior-Timbigbee River System serves.

STATEMENT OF TENN-TOM TOWING, INC.

As a member and director of the Warrior-Tombigbee Development Association, as well as a regular user of the Warrior-Tombigbee Waterway, we wholeheartedly support the testimony of the President of the Warrior-Tombigbee Development Association, Offa S. Nichols, Jr.

We primarily move petroleum products on the waterway and also operate a petroleum terminal in the Mobile Harbor. Without the proper funding of the Operations and Maintenance program of the Corps of Engineers it would be impossible for this area to compete with other operations on the Gulf Coast.

In order for the Warrior-Tombigbee and the Port of Mobile to continue to have an efficient and reliable navigation channel the Corps of Engineers must have more funds than the $11.8 million proposed for FY88. This amount will not allow the continuation of the on-going deficiency correction program and could only increase the future maintenance cost.

The approval of the Corps request for $11 million to initiate construction of the new Oliver Lock is critical to the timely and efficient contract placement to remove this dangerous and costly bottleneck.

We presently utilize the entire length of the Warrior-Tombigbee and work daily in and around the Port of Mobile. Without the constant operations and maintenance performed by the U. S. Corps of Engineers, it would not be possible for the barge traffic industry to continue to grow and provide this country with the most economical and energy efficient mode of transportation available today.

We appreciate the opportunity of expressing our views on the Warrior-Tombigbee Waterway System and the Port of Mobile and want to thank you for your cooperation in the past and continued interest for the future of all waterways in our nation.

STATEMENT OF WARRIOR & GULF NAVIGATION CO.

I am Nicholas J. Barchie, Jr., President of Warrior & Gulf Navigation Company. Our company is a member of the Warrior-Tombigbee Development Association and thereby supports the testimony to be presented by Mr. Offa Nichols as President of the Association. In the following paragraphs, we wish to address the extreme importance the Warrior-Tombigbee Waterway and the Port of Mobile has on our company.

Warrior & Gulf Navigation joins in a collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway due to lower costs, energy efficiency, and the major importance it has on domestic and international trade; e.g. low transportation costs via water is imperative to the coal producers, steel producers; farmers and paper companies in Alabama to maintain competitive prices in the world market in the movement of their coal, grain, steel and forest products.

Warrior & Gulf is a barge line located in Chickasaw, Alabama and owns 27 towboats and 305 barges making us one of the larger water carriers operating on the BWT system. With our current equipment ownership our annual capacity is approximately 10,000,000 tons. Additionally, we operate a coal handling and iron ore facility at Port Birmingham; two barge drydocks and one boat drydock at our Chickasaw facilities; and, a wholly owned subsidiary of Warrior & Gulf, Mobile River Terminal, is another bulk terminal handling various cargoes from and to ocean-going vessels in the Port of Mobile. Our total employment is 300 people.

Warrior & Gulf provides barge transportation on the BWT System for coal (domestic and export), iron ore, iron and steel products (export, import and domestic), scrap, gypsum and many other types of bulk commodities. With the recent opening of the new steel mill at Tuscaloosa, along with the pipe mill and the start-up of the new continuous caster at Fairfield, Alabama scheduled for 1988, and the projected increases in coal consumption during the next few years we contemplate increases to materialize in our steel, iron ore and coal shipments; thereby, requiring an efficient and properly maintained waterway along with the Port of Mobile most important to WGN in our continuing efforts to accommodate the increased demand. Moreover, we must not lose sight of the fact, that for the commitment to a new caster at Fairfield coming to fruition; commitments to private investment; and, other economic development to continue along this magnificent waterway such as the new Tuscaloosa Steel mill depends largely on our ensuring a viable and low cost transportation on this waterway. The continued efficiency of this waterway is critical to the viability of these projects.

Warrior & Gulf began using the Warrior-Tombigbee Waterway in 1940. During 1982, our capital investment for new equipment approximated $20,000,000; and in 1985 another $2,000,000; and in 1986 slightly over $2,100,000; in order for our company to continue providing economic water transportation to its customers along this waterway.

The primary limitations encountered in operating the Warrior-Tombigbee System continue to be Oliver Lock and shoaling along this waterway. With the severely depressed business levels being experienced in the waterway industry, Warrior & Gulf has had to increase its tow sizes from six (6) barges to eight (8) barges as a steady diet on this waterway with Oliver Lock being the only lock remaining that cannot accommodate our eight (8) barge tows, thus requiring us to make a double locking. With regard to construction funding the budget proposes $11 million to continue the new Oliver Lock. Approval of this amount will support the Corps' proposed schedule to replace this dangerous and costly bottleneck. Approval of this amount is critical to the timely and efficient contract placement to remove this dangerous and costly bottleneck.

Historically, our shoaling problem varies greatly from season to season dependent upon the length of our high water season (December - April) and the amount of flooding that occurs, e.g. during the season where the river stages run 60 feet or more for prolonged periods causes the shoaling to become more severe. Accordingly, the proposed amount for the Warrior-Tombigbee System's Operations & Maintenance is $11.7 million. The 5 year average is $12.5 million, which is somewhat lower than the longer term average due to the absence of major flooding and shoaling over the past two years. At best, the $11.7 million would probably support the bare bones operations tasks; however, it does not allow for the continuation of the on-going channel deficiency correction program. For example, actions that have been underway for several years to improve dredging disposal and reduce shoaling would have to be discontinued or terminated. Continuation of these programs are very critical to the efficiency and reliability of the navigation channel and to the reduction of future maintenance costs. Simply stated, we need the "additional capability" funding.

In closing, we wish to confirm our support for the Corps' budget request for $11.7 million in O&M and $11 million for construction funds for the Black Warrior-Tombigbee System and Oliver Lock; however, we strongly feel additional funds should be made available to ensure both an adequate O&M program and continuation of the channel improvement work on the BWT.

We respectfully request your continued support and assistance as your subcommittee considers appropriation of funds for these very important issues concerning the Black Warrior-Tombigbee System and Mobile Harbor.

STATEMENT OF FIRST ALABAMA BANK

The Port of Mobile is a major factor in the economy of Alabama and the U. S. Gulf Coast. Important to us are those factors impacting this economy and, certainly, the Warrior-Tombigbee Waterway is a vital factor in this area. It serves the manufacturing and mining region and all the agricultural areas and industrial production facilities in western Alabama. The waterway has served as an economic stimulant for one hundred years, having been periodically improved until today, it is a modern system with one major exception, the Oliver Lock and Dam, which needs replacing.

This waterway is currently handling most of the coal moving out of Mobile for export. Many basic materials move on this system and it is important that funds for an adequate Operations and Maintenance program be appropriated for the BWT. The $11.8 million budget item requested by the Corps of Engineers is not adequate, based on past history. This should be carefully evaluated.

The Corps of Engineers report on the replacement of Oliver Lock has now been approved by the Board of Engineers for Rivers and Harbors, and they are ready to commence construction for this replacement. We support the request for $11.0 million for this construction program. It is important that this continuing process not be interrupted.

The monies we are requesting are a valid investment by the Federal Government, which will continue to be matched many times over by local investment.

STATEMENT OF UNITED STATES STEEL CORP.

United States Steel Division of USX Corporation recently emphasized its commitment to maintain operations in Alabama by announcing plans to construct a new continuous slab caster at its operation in Fairfield, Alabama. In addition to the slab caster, additional money has been authorized to make improvements in associated rolling mills.

The Fairfield, Alabama operations relies heavily upon availability of Alabama's river system to transport iron ore, pellets, coal, ferroalloys and finished steel products. Our plans call for movement of approximately 3.8 million tons of material per year by barges between Mobile and Birmingport, Alabama. It is for this reason that we offer continuing support for the Corps of Engineers in their request for operation and maintenance appropriation for 1987. The Warrior Tombigbee System must be properly maintained to support business growth in Alabama.

We support the efforts of the Warrior Tombigbee Development Association in their efforts to assist the Corps of Engineers.

STATEMENT OF ALABAMA POWER CO.

The Warrior-Tombigbee Waterway is vital to the economic health of Alabama. The state's water transportation system must be efficient and well-maintained for the basic industries, such as mining and heavy metals, to provide a sound economic base for the state and for Alabama to enjoy economic growth.

Alabama Power Company's continued interest in the Warrior-Tombigbee Waterway is two-fold. First, our business is dependent on the general economic health of the state; and, second, we are a primary user of the waterway. For nearly three decades, we have used economical water transportation to deliver coal to two of our major electric-generating plants.

Four of Alabama Power Company's seven fossil-fueled, electric-generating plants are located on the Warrior-Tombigbee Waterway system. Coal from the Warrior coal field is delivered to two plants near the coal field and loaded onto barges for shipment to two generating plants in the southern and central parts of Alabama. The 1,525-megawatt Plant Barry in Mobile County, which began operation in 1954, is supplied primarily by the Warrior-Tombigbee Waterway, as is the 500-megawatt Plant Greene County near Demopolis.

We are pleased that funds have been budgeted to initiate construction of the new Oliver Lock. The pre-World War II Oliver Lock's capacity is inadequate, and this creates a bottleneck which impedes efficient operations on the river. Also, adequate funds for operation and maintenance must be made available to the Corps of Engineers to continue efficient operation of the waterway and to avoid expensive and unnecessary interruptions to river traffic.

Alabama Power Company received 5.0 million tons of coal in 1986 which were transported on the Warrior-Tombigbee Waterway. This represented 34 percent of the 14.5 million tons used to generate electricity for our customer's use. Failure to replace Oliver Lock or to properly maintain the waterway can have a significant adverse effect on the cost of providing electric service to Alabama Power Company's over 1,000,000 customers.

Alabama Power Company supports the collective efforts of the Warrior-Tombigbee Development Association, of which it is a member, to obtain the replacement of Oliver Lock and to obtain for the Corps of Engineers an adequate operations and maintenance budget which will ensure the long-term, efficient and economical viability of the waterway.

STATEMENT OF CBI SERVICES, INC.

During the last week of March 1987, the Warrior-Tombigbee Development Association will be giving testimony before the House and Senate Appropriations Committees in support of FY87 Corps of Engineers funding for the Warrior-Tombigbee Waterway and Port of Mobile.

As a member of this association, we have participated in the collective efforts to improve the efficiency and reliability of the Warrior-Tombigbee Waterway, because it results in lower freight costs for our products and contributes significantly to efficiency in energy consumption. The importance of this in enhancing local, national and international trade is clear.

In early 1970, my company commenced construction of a multimillion dollar fabricating facility on the Warrior River in Cordova, Alabama, which opened for business in 1974. This plant is equipped to fabricate, machine, weld, test and load onto barges extremely large and heavy steel vessels for use in the nuclear and petroleum industries, as well as in other industries such as chemical processing, pulp and paper, water and waste treatment and others. At the present time, our capacity is almost fully utilized on important Department of Energy and Department of Defense contracts. The bulk of these contracts relate to the Navy submarine program. We anticipate that this type of work will continue for a considerable length of time at our Cordova facility.

We strongly support the Corps of Engineers' budget request for O&M funds; however, we do not believe that the proposed $11.8 million for Operations and Maintenance is adequate for an effective program for the Waterway, because it does not allow continuation of several projects already underway designed to improve channel efficiency and reduce future costs. I believe the proposed $11 million for New Construction is adequate to continue work on the new Oliver Lock.

We respectfully request your dedicated support in maintaining and improving our waterway.

STATEMENT OF DRAVO BASIC MATERIALS CO., INC.

The Warrior-Tombigbee Waterway along with the other waterways of the State of Alabama are invaluable links to a successful Port of Mobile and the economic growth in South Alabama. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, will present testimony stressing the need for maintaining and enhancing the efficiency and reliability of the Warrior-Tombigbee System as well as the importance of low-cost, energy efficient water transportation to local, national and international trade. We fully support and endorse his testimony.

Dravo Basic Materials Company, Inc. is one of the leading producers of construction raw materials and aggregates on the Gulf Coast. We rely extensively on the waterways of Alabama, Florida, Louisiana, Mississippi and Texas for production and delivery of our products. In 1986 we transported via Alabama waterways in excess of 950,000 tons of sand and gravel. We also transported over 180,000 tons of limestone as well as significant quantities of other products. Our projections for 1987 are:

Sand and Gravel	1,250,000
Other	350,000

Dravo Basic Materials Company, Inc. operates a fleet of 23 boats, 85 barges and 7 dredges. We maintain a large terminal and handling facility on McDuffie Island in Mobile, Alabama in addition to numerous support facilities throughout South Alabama and the Gulf Coast.

The maintenance of authorized project dimensions is essential for the efficient, orderly production and delivery of materials throughout the waterway system. In order to provide this capability, it is imperative that the Army Corps of Engineers be provided with the appropriations necessary to continue the maintenance and development of the Warrior-Tombigbee Waterway System as requested in the fiscal year 1988 budget.

It is also requested that additional funds be provided to insure that the Corps has the capability and flexibility necessary to maximize the utilization of the Waterway System and Mobile Harbor. Additionally, the continued provision for planning funds to replace the outmoded Oliver Lock and Dam should not be overlooked.

We sincerely appreciate the Committee's faith in the future of the State of Alabama and welcome its continued support of these vital projects.

STATEMENT OF HARBERT INTERNATIONAL, INC.

The Warrior-Tombigbee Waterway is a vital transportation link in the State of Alabama. It provides for the most economical transportation of products of the mines, the iron and steel industry, agriculture, forest and other commodities, most of which is destined to the Port of Mobile for export; thus enhancing the U.S. balance of payments. The Waterway is a vital source of employment for thousands of people engaged in the above industries as well as barge operations and shipyards.

I strongly support the funding for the required improvements, including the replacement of the 48 year old, outmoded Oliver Lock, as well as the funds required for the 48 year old, outmoded Oliver Lock, as well as the funds required for operation and maintenance of the waterway.

The Budget proposal of $11.7 million dollars for operations and maintenance of the Warrior-Tombigbee Waterway is probably sufficient for minimal operations but would not allow for improvements in dredging disposal and reducing shoaling which is critical to the efficiency of navigation and reduction of future maintenance cost. The 5 year average for this work has been $12.5 million dollars.

The proposed $11 million dollar budget to fund the initial construction of the New Oliver Lock must be approved to enable this project to continue on schedule. You will note that $22 million dollars is required, one half of which will be taken from the Inland Waterways Trust Fund.

A more efficient waterway ensures the continued growth of industry and is conducive to further economic development in an area with one of the higher unemployment rates in the nation.

I support the testimony to be given by the President of the Warrior-Tombigbee Development Association and hope that the importance of his comments will be well taken by the appropriations Committee.

STATEMENT OF HUNT REFINING CO.

As a concerned user of the Warrior-Tombigbee Waterway, I would like to state my reasons for supporting this waterway.

Hunt Refining Company is a refinery that produces such products as all grades of gasoline, several types of asphalts, fuel oils and coke. We receive approximately 21,000 tons of crude oil per month and approximately 20,000 of vacuum bottoms by barge. We, in turn, barge out approximately 20,000 tons of crackerfeed a month. The above tonnage represents millions of dollars in revenue. Our dock facilities, which were first built in 1946, are located on the Black Warrior River, near the Oliver Lock and Dam. We have an expansion in the scope for the Hunt Refining Company, thus producing more products that will need to be barged out or more barged in. As a matter of fact, we have now completed an MTBE line and an asphalt loading line that are being utilized for the first time.

One crucial reason for us needing the waterway is that we make a product called "crackerfeed", named so because it is used in catalytic crackers. The only way we have of delivering this product is by the waterways. Fortunately, the refineries that we ship to are all over the intercoastal waterway.

With the opening of the Tennessee-Tombigbee Waterway, we anticipate the market in the North to open. We already have prospects to move an additional 100,000 tons/year to the Northern U.S. This gives us an optimistic view of other job possibilities.

We also receive crude oil from international freighters; first offloaded in Mobile into storage tanks, and then barged to our refinery.

In regard to the Port of Mobile, we would like to emphasize the draft limitations there and hope we can continue to have funding to allow us to offload our international freighters and move them in and out of Mobile in an economical and safe manner.

We were pleased with the proposed $11 million for the construction on the new Oliver Lock and Dam. But we were distressed to hear that actions underway for several years to improve dredging disposal and reduce shoaling would have to be deferred or terminated. A continuance of these programs are crucial to the efficiency and reliability of the navigation channel and to the reduction of future maintenance costs. So we are requesting additional capability funds sufficient to support continuation of the on-going channel improvement work.

Thank you. I am,

STATEMENT OF DAVID VOLKERT & ASSOCIATES, INC.

David Volkert & Associates, Inc., one of the largest design engineering/architectural planning firms in the State of Alabama, supports the FY87 Corps of Engineer's funding for the Warrior-Tombigbee, Port of Mobile, and the efforts extended by the Warrior-Tombigbee Association to restore funding to adequate levels.

With Alabama offices located in Mobile and Birmingham, David Volkert & Associates, Inc. is aware of the importance of the Warrior-Tombigbee Waterway, not only to our company which employs over 200 people, but to our state and nation as a whole. Since Mobile's largest industry is its port, the further development of this Waterway would not only add to Mobile's commerce and industry, fueling monies into its economy and providing needed jobs for its people, but would also improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile. This improved capability and reliability would allow for lower operating costs, higher energy efficiency, and added importance to local, national and international trade. With the shipments of coal, iron ore, farm products, and related products expected to triple in the future, the Warrior-Tombigbee is increasingly important to maintain the serviceability of our waterway system.

Confidence in the Waterway and its efficiency and modernization are important in bringing new industry to the Mobile area. Farmers in 21 counties in Alabama ship their grain to Mobile on this Waterway for export. To the Mobile area, with unemployment still high and with basic industry still struggling to become competitive and back on its feet, the modernization of the Waterway is essential. Lower operating costs to users of the Waterway and Port are essential to obtain a reasonable balance of the international export market allowing the U.S. to reduce our trade deficit. Increases in shipping and commerce result in opportunities for many companies, similar to DV&A, to obtain business and offer meaningful employment to citizens of the State of Alabama and other parts of the country.

We support the Corps of Engineers' budget request for $11.7 million in O&M funds and $11 million in construction funds for the Black Warrior-Tombigbee and Oliver Lock. We feel, however, additional funds should be made available in order to allow for continuation of channel improvements already underway, which are designed to reduce future costs.

We appreciate this opportunity to express to you our support of Col. Nichols, President of Warrior-Tombigbee Development Association, and the testimony to be given by him before the Appropriations Committees of the Senate and House. We are proud to join in the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile.

STATEMENT OF JIM WALTER RESOURCES, INC.

I would like to thank you for the opportunity to make a statement to your Subcommittee. Please accept this letter as my statement.

The Mining Division of Jim Walter Resources, Inc. mines over 8 million clean tons of coal per year. Of that amount, nearly 50% of our production is exported. Approximately half of our export production travels down the Warrior River and all our export production goes through the Port of Mobile. Our payroll for over 3,800 employees last year was in excess of $115,000,000 and taxes withheld and/or paid were in excess of $50,000,000. It is obvious from these facts and figures that this Company relies heavily on our waterways and port facilities and that they are of the utmost importance to this Company, its employees and the economy of the State of Alabama.

I strongly support the Corps' of Engineers budget request for at least $11.7 Million in O & M Funds and $11 Million in construction funds for the Black Warrior-Tombigbee and Oliver Lock. Our waterways and port facilities provide economic prosperity to Alabama that is worthy of your support. Further, I support the statements and testimony to be given by Mr. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association. I believe that the value of improved efficiency and reliability of the Warrior-Tombigbee Waterway and Port of Mobile cannot and must not be underestimated.

Consequently, I urge you to consider increasing the proposed appropriation for Warrior-Tombigbee Waterway operations and maintenance. The amount currently proposed is inadequate to allow additional capability for on-going channel deficiency corrections. An appropriation at this level threatens both the efficiency and reliability of our waterways.

The world coal business is at its most competitive level in history. News of any problems, especially transportation and delivery problems, is quickly spread by other coal producers around the world to the buyers to discourage purchases here. A blemish on our delivery record can have devastating, long-term effects from which we might never fully recover. Buyers lost today may never return tomorrow.

STATEMENT OF GOV. GUY HUNT OF ALABAMA

Dear Senator Johnston:

It is indeed a pleasure to participate in the Subcommittee hearings in support of commercial navigation on the Black Warrior-Tombigbee River Waterway in Alabama. It is also a real pleasure to participate with such a fine organization of fellow Alabamians as represented by the membership of the Warrior-Tombigbee Development Association.

Thirty-five years ago the Warrior-Tombigbee Development Association was formed and during this time the importance of this waterway has continued to grow with tonnage rising from 2.6 million tons in 1950 to more than 18 million tons of commercial commerce in 1985. Since the founding of the Warrior-Tombigbee Development Association, the waterway has moved into a new era of modern navigation. Prior to 1950, the system was comprised of obsolete facilities which were constructed between 1871 and 1915. With the recent authorization in Title III of Public Law 99-662 for the replacement of the William Bacon Oliver Lock and Dam on the Black Warrior River near Tuscaloosa, we will have the tools to continue the growth of commercial navigation and the efficient flow of commerce from and to the heart of Alabama's industrial and mineral resource region.

I join with the Warrior-Tombigbee Development Association in requesting $22 million for Fiscal Year 1988 for the replacement of the Oliver Lock and Dam, with one half this amount coming from the Inland Waterways Trust Fund and Congressional appropriation providing the other half. Funding of this project and other similar expenditures for our great inland navigation system is a true investment in the future of our great country.

In addition, I also support the request of the Warrior-Tombigbee Development Association for the funding by Congress of necessary operations and maintenance of the Black Warrior-Tombigbee Waterway. The proposed level of $11.7 million would, it is believed, only provide for a minimum level of operation and maintenance but, would not provide for continuation of several important activities by the Army Corps of Engineers to increase the efficiency of disposal of dredge material and reduce shoaling in the waterway. It is important these activities be continued through additional funding.

I join with the Warrior-Tombigbee Development Association in support of these requests for appropriations and pledge my support and commitment to participate in an investment for the future of our State and Nation.

STATEMENT OF SOUTHERN COMPANY SERVICES, INC.

Southern Company Services, Inc., on behalf of Alabama Power Company, Gulf Power Company and Mississippi Power Company supports the Warrior-Tombigbee Development Association and its' President in their efforts before your committee. The Southern electric system continuously uses the Warrior-Tombigbee Waterway to deliver coal to system plants and therefore, the condition of the waterway affects the economy of our service area.

Alabama Power Company, Gulf Power Company and Mississippi Power Company join with the Warrior-Tombigbee Development Association in an effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway because of the economics of water transportation and the importance of the Warrior-Tombigbee Waterway to local, national and international trade.

For the past twenty-three years these three utilities have used the Warrior-Tombigbee to transport coal to their respective electrical generating plants at Demopolis, Alabama; Mobile, Alabama; Pensacola, Florida; Panama City, Florida; Sneads, Florida; and Biloxi, Mississippi. In 1986 more than 6.1 million tons of coal was transported from points along the Warrior-Tombigbee Waterway for these three electrical utilities. In 1987 system plants will be receiving tonnage off the Tennessee-Tombigbee Waterway that would have previously gone down the Mississippi River through New Orleans, but with the opening of the Tennessee-Tombigbee Waterway the barges will be moving onto the Warrior-Tombigbee River system and through Mobile. The Port of Mobile is the hub of the Central Gulf Coast and the continued development of its facilities and support services is critical to the economy of the tri-state area served by the Southern electric system.

Because of the economic advantage of water transportation over other modes of transportation; the nearly 1,500,000 customers of these three electrical utilities will be directly affected by expenditures for maintenance and upgrading of the Warrior-Tombigbee Waterway, which will improve the waterway's efficiency and reliability. Higher costs through inefficiency or unreliability of the Warrior-Tombigbee Waterway will have a direct and adverse effect upon our customers.

It is for these reasons that a program of constant maintenance and upgrading of the Warrior-Tombigbee Waterway channels and locks is not only necessary but imperative. We support the Corp's budget request for O&M for the Warrior-Tombigbee and Mobile Harbor, but in addition, would like to see more funds made available to ensure both an adequate O&M program and continued channel improvement work.

STATEMENT OF ALABAMA STATE DOCKS DEPARTMENT

Mr. Chairman:

The Alabama State Docks Department is again pleased to appear before this Committee on behalf of the Warrior-Tombigbee River System, and we would like to express our appreciation for your diligence with respect to the dedication and energy with which this Committee annually undertakes such an important task.

This nation's inland waterway system is a great and national asset to our country with recognizable values to the shippers, receivers, importers, and exporters of our nation. This Committee over the years has done an admirable job in greatly enhancing this national benefit.

The Warrior-Tombigbee River System is one of the heavier utilized waterways in the United States and its operation and maintenance are of vital importance to the State of Alabama and the Alabama State Docks Department.

The Alabama State Docks Department over the last ten years has involved itself in a continuing program of renovation of its existing facilities, and of new construction and expansion programs investing in excess of $250 million in the last decade putting into place the newest and most technologically advanced deep-water terminal cargo handling facilities in the United States.

The Department's Bulk Handling operations at the Port of Mobile are vital to the whole MidAmerica Region of the United States as well as the State of Alabama, and in concert with our Inland Waterway System function as an expedient and cost-effective means of shipping products produced and manufactured in the State and in MidAmerica into world markets.

The Warrior-Tombigbee Waterway was the original cost-effective incentive for moving large volume coal shipments from the North part of the State through the Department's McDuffie Terminal Coal facilities for export all over the world. In addition, volume shipments of grain move annually from inland elevators located on the Warrior-Tombigbee Waterway by barge to the Port of Mobile for subsequent export to consuming nations around the world.

Major shipments of bulk ores are handled through the Department's Bulk Material Handling Plant and a large percentage of this tonnage moves on the Waterway System.

The highly competitive posture of the Alabama State Docks and the Port of Mobile is a direct result of the Port's enviable inland transportation infrastructure. Four major rail lines and one regional carrier serve the Port of Mobile; however, it is the State's inland river system that continually gives the Port its competitive edge.

The Warrior-Tombigbee Waterway provides a major transportation artery for large volume bulk shipments moving to and from the Port, and the Waterway's continued Operation and Maintenance are of vital importance to the Alabama State Docks, the Port of Mobile and the State of Alabama.

We join with and support Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, in his testimony with respect to the Corps' Budget for Fiscal Year 1987 funding and support the Budget request for $11.7 million in Operating and Maintenance funds and $11 million in Construction funds for the Black Warrior-Tombigbee and Oliver Lock. There is, however, a need indicated and we do support additional capability funds in an amount sufficient to support continuation of the ongoing Channel Improvement work.

This River System is energy efficient and constitutes an integral part in local, national and international trade, and we at the Alabama State Docks Department pledge our unerring support to its continued development.

STATEMENT OF PARKER TOWING CO., INC.

My name is Tim Parker, Jr. and I am Executive Vice-President of Parker Towing Company, Inc. I wholeheartedly endorse and support the testimony of Colonel Offa Nichols, President of the Warrior-Tombigbee Development Association. I join with him and other members of the Warrior-Tombigbee Development Association in efforts to improve the efficiency and reliability of the Warrior-Tombigbee Waterway.

Parker Towing Company operates a fleet of one hundred fifteen (115) hopper barges, thirteen (13) towboats and two (2) tank barges. We have been providing barge transportation service to shippers on the Warrior-Tombigbee Waterway for fifty (50) years.

The Warrior-Tombigbee Waterway and Port of Mobile are not only important to my Company and industry, but it is a vital part of the economic well being of Alabama. Most of the coal exported from Alabama, through the Port of Mobile, moves to Mobile via the Warrior-Tombigbee Waterway. Agricultural products also move in considerable volume via the Warrior-Tombigbee for export. On almost any given day, you will find a wide variety of items being shipped by barge including not only coal and agricultural commodities, but also forest products, iron and steel articles, petroleum and chemical products, paper products and cement, just to name a few. This broad spectrum of products on the Warrior-Tombigbee Waterway clearly indicates the widespread economic impact this waterway has on business in Alabama.

As a member of the Warrior-Tombigbee Development Association, I support the U. S. Army Corps of Engineer's Operations and Maintenance (O & M) budget request and their Construction Budget request for the Warrior-Tombigbee and Oliver Lock. I respectfully request that "additional capability" funds should be made available to insure the continuation of the ongoing channel improvement program. Sufficient funding for O & M channel improvement and construction will lead to continued competitive barge transportation for Alabama shippers. Anything that we can do to make these shippers more competitive will lead to increased activity by our area's industry and to increased employment.

In closing, let me reiterate that the operation of the Warrior-Tombigbee Waterway is of great importance to not only me and my firm, but to the people of our region.

STATEMENT OF ALABAMA ELECTRIC COOPERATIVE, INC.

On behalf of Alabama Electric Cooperative, Inc. and its member systems, I am writing to request your continued support of FY87 Corps of Engineers' funding for the Warrior-Tombigbee Waterway and the Port of Mobile.

As AEC is dependent on water transportation for its most economical way of shipping coal to our Tombigbee Power Plant, we feel it is imperative that adequate funding be appropriated for the Warrior-Tombigbee Waterway and the Port of Mobile. Our member systems are depending on AEC for low cost and reliable electricity and by keeping our fuel transportion cost down is one way of insuring them that our rates will remain as low as possible.

We are very grateful to you for your help in this matter in the past, as well as other areas related to the rural electric program, and sincerely hope that you will lend your support in seeing that the Corps of Engineers' budget request is approved. A more detailed statement is attached relating to this matter.

Alabama Electric Cooperative, Inc. (AEC) and its members fully support the testimony of Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, before your subcommittee. As a member of the Warrior-Tombigbee Development Association, AEC backs the Association in its joint endeavor to improve the efficiency and reliability of the Warrior-Tombigbee Waterway.

AEC is a generation and transmission cooperative that supplies wholesale electrical energy to sixteen rural distribution cooperatives, four cities, and two industries in central and south Alabama and northwest Florida. These rural distribution cooperatives and cities inturn supply the retail electrical energy to approximately 500,000 consumers in their respective service areas. A portion of this electrical energy is generated at AEC's coal-fired Tombigbee generating plant located at mile-point 89 on the Warrior-Tombigbee Waterway. The electrical energy is delivered to AEC's members over its transmission system and is also wheeled over other companies' transmission systems. When the need arises, and if AEC has excess generating capacity at the time, this electrical energy can be wheeled to others.

To generate the above mentioned electical energy, over 1.1 million tons of coal were burned at the Tombigbee generating plant in 1986 and it's projected that this rate will increase into the mid 1990's. The Tombigbee generating plant has the capability to receive coal by rail and barge. But, due to the barge transportation being substantially less expensive, 73 percent of the coal was moved to the plant in 1986 via barge.

The prime reason for AEC locating the Tombigbee generating plant on the Warrior-Tombigbee Waterway was so the plant would have the availability of efficient and reliable water transportation. This was not only important to AEC in terms of lower transportation cost, but it also translated into lower electrical cost for the member-consumers.

AEC has purchased a site for a future generating plant on the Warrior-Tombigbee Waterway approximately 50 miles North of the Tombigbee generating plant. This plant is expected to be in operation in the mid to late 1990's. Again, one of the prime reasons for selecting this site was the availability of an efficient and reliable waterway.

Fuel and its transportation expense make up 33 percent of AEC's cost of generating power, which is the largest single item of expense. Therefore, any change in this area has a significant impact on AEC's operating expenses and the ultimate consumer's cost for electrical energy. This is extremely important to AEC's service area whose economy is heavily forestry/agricultural and is still depressed. An efficient and reliable Warrior-Tombigbee Waterway will translate into lower electrical energy cost which will aid in the economic recovery of this area.

AEC started utilizing the Warrior-Tombigbee Waterway in 1969 to transport coal to its Tombigbee generating plant. The plant is located on the back side of a 90 degree bend in the river which compounds the silting-in of the barge unloading area and normally requires annual dredging. This, along with the periodic lock closures for maintenance, is the only limitations AEC has encountered in transporting fuel on the Warrior-Tombigbee Waterway.

AEC fully supports the Corps of Engineers' budget request for $11.7 million for operations and maintenance funds for the Black Warrior-Tombigbee Waterway and for the $11 million construction funds for the new Oliver Lock. AEC also supports the operations, maintenance, and construction funds the Corps has requested for the Port of Mobile.

STATEMENT OF ALABAMA STATE DOCKS DEPARTMENT

Good day Gentlemen:

On behalf of the Alabama State Docks Department and the Port of Mobile we appreciate the opportunity to appear before this Committee today and offer this statement in regard to Fiscal 1988 appropriation measures relative the Mobile Harbor.

The Alabama State Docks Department is the terminal facilities operator for the Port of Mobile and operates and maintains port handling facilities which include a Bulk Material Handling Plant, Public Grain Elevator, Export Coal Handling Terminal, general cargo facilities including wharves, piers and warehouses as well as a Terminal Railway. The Port complex entails approximately 1445 acres and is valued in excess of $500 million.

The primary cargoes handled through the Port of Mobile include inbound ores such as bauxite, manganese, magnesite, ilmenite, iron ore and steam coal. Grain exports include soybeans, corn, wheat, oats, milo, middlings, and screenings. Coal for export constitutes a major cargo as well as outbound crude oil which moves to the Port from recovery operations in Florida and North Mobile County.

During the last decade the Alabama State Docks Department and the State of Alabama have expended in excess of

$250 million on renovations, expansions and improvements to the Port handling capabilities at the Mobile facilities and has immediate plans for continuing investments in these facilities of approximately $10 million within in the next 18-month period.

These funds have been and are being expended to meet the required present and future cargo handling capability of tonnages generated by our in-place inland river system, the five trunk line railroads which serve the Port, and the forty-five truck lines which initiate and terminate cargo in Mobile.

A complete Port renovation program impacting each of the three bulk terminal operating facilities at Mobile has been completed and the Department is continuing to invest in its general cargo handling capability with a proposal for a new warehouse, the development of a specialized steel loading berth, and the renovation of existing warehouses.

Export grains and coal have constituted major volume cargo movements within the last several years and much of this tonnage has as its origin locations on the inland river systems of the State of Alabama.

Programs which we have previously discussed with this Committee with respect to the acquisition of additional spoil disposal sites and the better utilization of existing sites through systematic management of spoil disposal are underway at this time.

The Alabama State Docks Department in concert with the Governor of the State of Alabama is supporting the U. S. Army Corps of Engineers continued programs for Maintenance of the Mobile Ship Channel and is respectfully requesting this Committee to allocate $8,995,000 which is the Corps' project capability for Operations and Maintenance functions in the Mobile Harbor for Fiscal 1988.

The Alabama State Docks Department, the State of Alabama, and the U. S. Army Corps of Engineers have jointly planned an environmentally sound and economically feasible phased approach to the new construction project which in its initial phase will deepen the Mobile Ship Channel from its present 40 feet to 45 feet, and the Department along with the Governor of the State of Alabama respectfully requests that this Committee approve the Corps' Budget Request for continuing work in this regard.

We again appreciate the opportunity to appear before this Committee and voice our support in concert with that of Governor Guy Hunt for the Fiscal 1988 Budgeted Allocations to reflect the requested amounts.

We respectfully request this statement be incorporated in and made a part of the permanent record of these Hearings.

STATEMENT OF BUFFALO ROCK CO.

Our Company operates throughout the State of Alabama and we are writing in full support of the Corps' of Engineering funding for the Warrior-Tombigbee Waterway in the Port of Mobile.

We are at this time making plans for the enlargement of our facilities in Mobile and it would be very discouraging if the government did not continue to support the Waterway project.

Another plus is the fact that the Waterway keeps other forms of transportation cost competitive, which accrue substantial savings for the entire area.

We hope that Congress will go along with the required funding that is so essentially needed.

STATEMENT OF VULCAN MATERIALS CO.

We support the testimony of the Warrior-Tombigbee Development Association. We are part of the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile. Our plans for the future include the use of the Waterway to ship crushed stone to the Gulf Coast to be used by the construction industry in concrete, asphalt, and road bases. The crushed stone will replace the rapidly depleting gravel, clam and reef shells with a superior construction material. The upgrading of the Waterway will not only benefit an area with unemployment still among the highest in the nation, but will better utilize the lower cost, energy-efficient barge transportation.

We support the Corps' budget request for Operations and Maintenance for the Warrior-Tombigbee and Mobile Harbor, but we feel that additional funds should be made available to ensure both an adequate O&M Program as well as a channel rehabilitation program. I thank you for your efforts in acquiring the proposed $11 million to initiate the construction of the new Oliver Lock which will be an investment in the future of our nation and region, as well as Alabama.

STATEMENT OF SOUTH CENTRAL BELL

As with all businesses, the state of the economy has a direct bearing on the well-being of South Central Bell. An economic slowdown or upturn affects our business substantially--and fairly quickly.

So you can understand why South Central Bell is interested in any efforts and/or projects that promise to provide long-term benefits to the economy of Alabama and its people. The Warrior-Tombigbee Waterway and the Port of Mobile are two such projects; they will spur economic growth from one end of this state to the other.

Not only does a robust economy generate new business for us, but it also aids in delaying our need for rate relief from Alabama ratepayers.

We support the efforts of the Warrior-Tombigbee Development Association because we believe those efforts will lead to long-term benefits in the areas of energy conservation, international trade, and the economic well-being of Alabama citizens.

I'd also like to lend my full support to the Corps of Engineers' request for adequate funding for operations and maintenance of the waterway and port and the construction of the Oliver Lock.

I know the Association can count on your wholehearted support in this matter.

STATEMENT OF SOUTHTRUST BANK OF ALABAMA, N.A.

This letter is written in behalf and in support of the Warrior-Tombigbee Waterway. As one interested in both the economic development of our state and the strength of its present economy, I feel continued development and increased funding for operation of the waterway is essential to the State of Alabama.

Our support of the Waterway is also of utmost importance to a number of our customers throughout the State, whose businesses and future growth are contingent upon adequate transportation facilities in this era of competition in local and world markets.

We here at SouthTrust Bank of Alabama strongly endorse and support the Warrior-Tombigbee Development Association.

STATEMENT OF AMERICAN CAST IRON PIPE CO.

On behalf of the American Cast Iron Pipe Company, I urge you to act favorably on the Corps of Engineers' request for Operations and Maintenance funds for the Warrior-Tombigbee Waterway and the Port of Mobile. However, in our view, the Corps' requested budget of $11.8 million should be increased and we urge that additional funds be made available to continue the new Oliver Lock. We also request "additional capability" funds sufficient to support continuation of the on-going channel improvement work.

My Company exports extensively through the Port of Mobile. Our exports have expanded steadily over the last ten years by making good use of the Warrior-Tombigbee Waterway. In a typical year we export approximately 40,000 tons of pipe through the Port of Mobile and have found barges and a dependable waterway to be extremely important to our efforts. Often times, it is necessary that we move barge loads of pipe on a very close schedule to coordinate with the arrival of ocean vessels at Mobile, thus the dependable waterway can be critical.

We employ approximately 2,600 people in Birmingham, Alabama and our export business has contributed substantially to the strategic plans of our Company, the employment of our people, and the Alabama economy. In fact, the Warrior-Tombigbee Waterway and the Port of Mobile are important to the economic well-being of our entire State, as in addition to our pipe, we find large volumes of iron and steel, ore and coal moving in water commerce.

Finally, I respectfully request that the Committee give careful consideration to the testimony to be provided by Colonel Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association. If this waterway is allowed to deteriorate, it will have an adverse effect on our business, our employment and the general welfare of our entire area.

Thank you in advance for your support of these funds.

STATEMENT OF GULF POWER CO.

Gulf Power Company is an investor-owned electric utility and a member of The Southern Company; we serve 266,730 customers in Northwest Florida. Our company utilizes coal for over 99 percent of its total generation requirements within Florida and consumes approximately 2.9 million tons per year for that purpose. Over 95 percent of our coal deliveries in Florida are dependent upon waterway transportation.

In 1986, Gulf Power moved approximately 1.0 million tons of coal on the Warrior-Tombigbee Waterway and/or through the Port of Mobile. The remainder of Gulf's coal delivered over the national river systems originates from the Southern Illinois Coal Basin vicinity and travels down the Mississippi River through the Port of New Orleans. From the ports of New Orleans and Mobile, all waterway deliveries travel via the intercoastal waterway for delivery at our Pensacola and Panama City generating plants.

As you can see from Gulf's dependence on the Warrior-Tombigbee Waterway and the Port of Mobile, we wholeheartedly support the need for adequate funding to properly maintain and improve operations. It is imperative that Gulf continue to receive coal shipments in order to provide continued reliable electric service at the most economical cost to our customers. We are also concerned about the future industrial growth in our service area and must be certain that adequate fuel supplies can be transported to our generating plants.

In summary, we are in full support of the efforts of the Warrior-Tombigbee Development Association to provide efficient and reliable waterway systems for coal delivery. We urge you to approve the Corps' O&M Budget request to provide adequate funds to maintain the Warrior-Tombigbee Waterway and the Mobile Harbor. In fact, we would urge you to approve more than the proposed $11.8 million which will only provide bare bones operation tasks. Also, the $11.0 million funding for new construction at Oliver Lock is a very important part of the Corps' budget request and must be approved.

We feel that it is not only in Gulf Power's interest to support this worthy endeavor, but also in the best interest of the customers of our service area and the nation to improve our capabilities to transport coal and other commodities from points of origin to market places via the Warrior-Tombigbee Waterway and the Port of Mobile.

STATEMENT OF MISSISSIPPI POWER CO.

Colonel Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, is appearing before your Committee in support of the Waterway and the Corps of Engineers' budget request relating to the project. As President of Mississippi Power Company, a user of the Waterway, I am writing in support of Colonel Nichols's testimony. I am also requesting consideration be given to increasing the proposed funding level to ensure both an adequate operation and maintenance program, and continuation of the channel improvement work for the BWT.

The cost of fuel is the single largest operating expense Mississippi Power Company faces. Coal mined in the region served by the Warrior-Tombigbee Waterway provides us with a reliable, competitive source of fuel. Any deterioration of the reliability of shipping along the Waterway would force the Company to higher cost suppliers.

Furthermore, the Warrior-Tombigbee is one of only two alternative waterways by which coal is delivered to our generating units. Should there be disruptions in the coal deliveries that normally come down the Mississippi River, the Warrior-Tombigbee would provide the only viable waterborne alternative for ensuring that adequate supplies of coal are delivered to Mississippi Power Company in a cost effective manner.

The Warrior-Tombigbee Waterway has played an important role since 1976 in the delivery of coal to Mississippi Power Company's facilities. In 1986, approximately 834,000 tons, or 26 percent, of our coal purchases were shipped over this Waterway.

Mississippi Power Company operates in Southeast Mississippi and provides electric service to over 172,000 customers. Our customers include several military installations, federal government agencies, and prime defense contractors.

Any deterioration in the ability to ship over this waterway, or an increase in our cost due to increased delays, would not only adversely affect all of these customers including federal installations, but would also impede future economic development in Southeast Mississippi.

Your favorable consideration of the testimony on behalf of the Warrior-Tombigbee Development Association will be greatly appreciated.

STATEMENT OF T.L. JAMES & CO.

Mr. Chairman:

T. L. James & Company, Inc. is a diversified construction company that owns and operates seventeen hydraulic cutter-suction dredges that maintain the inland waterways of the Gulf and Atlantic Coast Regions. Our Company supports the funding request by the Warrior-Tombigbee Development Association, for the Army Corps of Engineers' Operations and Maintenance Budget in fiscal year 1988. Our reasons are outlined in the following paragraphs.

The Army Corps of Engineers' Operations and Maintenance Budget is an important barometer of the economic health of our company, as well as the national dredging industry. "O & M" funding on the Warrior-Tombigbee navigation system funds an important segment of our business in that region. The funding also provides a more efficient navigation system that reduces the cost of the work we perform for the Corps.

I would like to focus your attention on the fact that navigation and dredging interests are only two segments of the regional economy that are enhanced by "O & M" funding. Approximately 75% of the revenue from a dredging contract is funneled into the economy of the local community. An additional 10% of our revenue benefits the economy of our home port. Much of the labor employed on our equipment is provided from the local workforce of nearby communities. A payroll account is usually handled by a local bank.. Local fuel and hardware suppliers receive approximately half of our revenues in the form of local purchases of those items. It is clear that "O & M" expenditures enhance the health of other commerce in the economy of the communities affected, as well as provide for more efficient and economical navigation.

A safe and reliable Warrior-Tombigbee transportation network is of paramount importance to the waterborne commerce on that network, as well as the health of the regional economy in general. I hope I have clearly outlined for you, from our perspective, the importance to us of the efforts put forth by the Warrior-Tombigbee Development Association concerning the Army Corps of Engineers "O & M" budget for fiscal year 1988.

STATEMENT OF LAPEYROUSE GRAIN CORP.

Lapeyrouse Grain Corporation is a regional grain company operating grain elevators in five Southern states. Specifically two of our facilities are located on the Warrior-Tombigbee Waterway System. This system provides reliable, low cost transportation to the surrounding agricultural communities. Their grain products move into the export market through Mobile Public Elevator.

We have a vital interest in seeing this waterway well maintained and upgraded. We, therefore, ask you to accept and support the testimony being presented by Mr. Offa S. Nichols, Jr., president of the Warrior-Tombigbee Development Association.

For the record, we support the Corps' budget request for $11.7 million dollars in O and M funds and $11 million dollars in construction funds for the Black Warrior-Tombigbee and Oliver Lock.

In addition, we support the association's request for "additional capability" funds sufficient to support continuation of the on going channel improvement work. This improvement work will have significant returns to the users of the system by providing a dependable, least cost transportation mode available on a year round basis.

APALACHICOLA-CHATTAHOOCHEE-FLINT WATERWAY

PREPARED STATEMENT

Senator JOHNSTON. We will also insert into the record at this point a statement submitted by the Tri-River Waterway Development Association regarding the Apalachicola, Chattahoochee, Flint Waterway.

[The statement follows:]

STATEMENT OF TRI RIVERS WATERWAY DEVELOPMENT ASSOCIATION

SUMMARY

TRI-RIVERS WATERWAY DEVELOPMENT ASSOCIATION

REQUEST FOR FY 1988 FUNDING

The Apalachicola-Chattahoochee-Flint Waterway

Operations and Maintenance	$ 6,046,000
Studies (Continuation of "308"). . .	$ 320,000

Thank you, Chairman Johnson and members of the committee, for this opportunity to present the needs of the Apalachicola-Chattahoochee-Flint Waterway as we see them.

I am Homer Hirt, Jr. of Sneads, Florida, president of the Tri-Rivers Waterway Development Association. For more than a quarter of a century our association has worked to bring about economic development in Southeast Alabama, Southwest Georgia, and Northwest Florida and to see that the ACF waterway is used to the benefit of all citizens of this multi-state region.

Perhaps this region can best be described as an "unkept promise." Because of both its natural and human resources, it's a region of tremendous potential. But we will never realize this potential unless we continue our commitment to these resources.

And the one resource that distinguishes our region from so many other sections of the country is our waterway, an asset that, Mr. Chairman, you and other members of your committee have championed so well for many years.

This enduring support was probably more apparent in 1986 than ever before.

As you know, in 1986 our region experienced the worst drought in 100 years. As the earth turned to powder and streams became a trickle, commercial use of the waterway stopped. As director of the Port of Jackson County, Florida I experienced first-hand how the lack of water transportation impacted our area.

Still, when the figures for commercial use of the waterway were compiled at year's end, the ACF had handled 970.651 tons of commerce--the third highest total in the last nine years. This was accomplished despite the fact that we had no river traffic for some three and one-half months.

This traffic was possible only because we entered the drought with the waterway in the best condition it had been in in years. Consequently, we were able to maintain traffic far longer than we would have been able to under the same conditions only five years ago.

Thankfully, the Good Lord has once again blessed us with rain and activity on the system is full-speed ahead. And the best of educated estimations is that water conditions in 1987 will be much improved over last year.

There are six public ports along the ACF waterway representing an investment of more than $15 million. In addition, there are millions of additional dollars invested in private facilities and industrial operations.

And economic development factors show that the tonnage we moved ion 1986 accounted for more than 1,000 jobs, $18 million in personal income and $1.5 million in state and local taxes along the waterway.

At Tri-Rivers, we have adopted the slogan, "ACF. The waterway that works for Alabama, Georgia and Florida."

Without question, the waterway is working, helping to bring dollars to a region that desperately needs them. And we're convinced that this work of the waterway has really only just begun because of changes in political attitudes, because of our linkage to the Tenn-Tom, and because of feasibility studies we now have in progress.

And this is why we're here today Mr. Chairman. To ask that your committee continue to support the funding necessary to insure that the ACF keeps working.

The Administration's request for operation and maintenance for our waterway for the next fiscal year is $6,046,000. We respectfully ask that this committee concur with this request.

In addition, we wholeheartedly endorse the Administration's recommendation to appropriate $320,000 to the Corps of Engineers to continue its basinwide "308" study.

Mr. Chairman, you and your fellow committee members have stood firm in your resolve to see that the nation's waterways remain a valuable resource. Because of this commitment, you have touched many lives across this land, and certainly throughout the Tri-Rivers area.

We are grateful for this commitment and for the knowledge that it will not waver.

Thank you.

ARKANSAS RIVER BASIN PROJECTS

STATEMENT OF WALLACE GARRINGER, CHAIRMAN, ARKANSAS RIVER BASIN INTERSTATE SYSTEM

Senator JOHNSTON. Next, the Arkansas River Basin Interstate Committee with Wallace Garringer, chairman.

Mr. GARRINGER. Mr. Chairman, Senator, how are you? Mr. Chairman, my name is Wallace Garringer. I am executive director of the Pine Bluff Jefferson Port Authority in Pine Bluff, Ark., and serve as chairman of the Arkansas River Basin Interstate Committee. This committee consists of five delegates from each of the states of Arkansas, Colorado, Kansas, Missouri, and Oklahoma, appointed to represent those states in water resource matters by their respective Governors.

I am accompanied here by members of the Interstate Committee. I ask them to rise so that you will see some of our interest in coming to Washington. We appreciate you.

Senator JOHNSTON. Glad to have you, gentlemen.

Mr. GARRINGER. The statement I make is testimony to the support that we have had from this five-state organization. As a summary, we have two major areas of concern. The first, economic development; the second, water resources management projects. For economic development, we urgently recommend that Congress establish economic development as a national priority.

We are concerned, as you, that recent cost-sharing requirements benefit the wealthy communities to the detriment of the poor and growing areas.

We appreciate, Mr. Chairman, your enthusiasm for navigation and the benefits to our nation. We have seen them on the McClellan-Kerr navigation system. It has become a model for other waterways. We are grateful for the visits by you and your associates.

We also have found that military use of the waterways is probably an untapped potential. Recent test movements by the Oklahoma and tests by the National Guard show cost savings of 65 percent by barge as compared to truck transportation.

We urge the Congress to encourage the Military Traffic Management Command to identify opportunities to use our nation's navigable waterways, which is important to both economic development and our defense posture. A need exists for backwater harbors mentioned earlier, which contribute to economic development and reduced transportation costs, thereby enhancing our nation's competitive position in global trading and global economy.

We ask you to go on record recognizing a federal interest in authorization and funding of slackwater harbors. We request further that Congress establish a national water policy, recognizing the importance of water in all aspects of our economy and with provision for an upstream flood prevention program that would encourage conservation of top soil for our farmland and the development of long-range conservation programs.

Concerning water resources management projects, we urge continuation of authority, as did Senator Bumpers and Senator Pryor, for the McClellan-Kerr Arkansas River navigation project until the eight remaining problems identified by the Little Rock District Corps of Engineers have been satisfactorily resolved, including much-needed repairs to dam 2 and construction of a lock and dam at the mouth.

These are crucial. They are essential for the future of the navigation system. Also of great importance is completion of the Arkansas River feasibility study examining needs for additional water projects to support the nation and our region.

Finally, Mr. Chairman, we strongly support the statements of the five individual states wherein they request funding for planning and construction and vital projects. We share your belief that funds invested today for multipurpose water projects enhance our nation's future, save sizable expenditures in the future, and broaden the tax base throughout the entire nation.

We thank you for the opportunity to share our thoughts, our concerns, and visit with you today. We look forward to working with you in the future toward water policies and programs, especially for 1988.

Senator JOHNSTON. Thank you very much, Mr. Garringer, and I hope that the McClellan-Kerr Waterway continues to do well. This cost-sharing business didn't originate in this committee, I can tell you. But at least we got the legislation passed and we did get some new starts passed, and that was the price we had to pay to get the first authorization bill we had in more than a decade.

We will do the best we can with it. I agree that it ought to be a federal responsibility, and I hope you continue to do well with McClellan-Kerr. Thank you, Mr. Garringer.

[The statement follows:]

STATEMENT OF WALLACE A. GIERINGER, CHAIRMAN, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman, I am Wallace A. Gieringer, Pine Bluff, Arkansas, Chairman of the Arkansas River Basin Interstate Committee. It is our pleasure and honor to appear before you and the distinguished members of your Committee.

The Arkansas River Basin Interstate Committee consists of five delegates from each of the states of Arkansas, Colorado, Kansas, Missouri and Oklahoma, who were appointed to represent those respective states by their Governors. It is their responsibility to coordinate water resource matters among the states, and to speak for the Arkansas River Basin in appearances before Committees of Congress and Regulatory Agencies.

I am accompanied here today by members of the Interstate Committee, and I would appreciate the opportunity to have them, with other citizens who have accompanied us today, stand as a group, attesting to their unified support for our presentation.

My testimony will be brief and we have incorporated additional material pertaining to the five states we represent in the written statement which we have submitted.

ECONOMIC DEVELOPMENT

The Interstate Committee urgently recommends that Congress establish economic development as a national priority to include the use and development of our nation's waterways.

We are concerned that recently expanded non-Federal cost-sharing requirements will quickly result in limiting participation in Federal water programs to wealthy communities. The poorer areas of our nation which have the greatest need and potential for growth - but limited tax base - will be unable to participate because they cannot even meet the study cost-sharing requirements.

Military Use Of The Waterways

Two recent test movements of military equipment on the inland waterways by the Oklahoma and Texas Army National Guard reveal Federal cost savings of 65% over the cost of truck transportation.

The Interstate Committee urges the Congress to encourage the Military Traffic Management Command to identify opportunities to use the nation's navigable waterways which can be important to our nation's economic development and defense posture.

Slackwater Harbors

A need exists for slackwater harbors which contribute to economic development and reduce transportation costs, thereby enhancing our nation's competitive posture in a global economy.

We request that the Congress go on record recognizing a Federal interest in authorization and funding of off-channel harbors in accordance with "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (dated March 1983) for regular feasibility and Section 107 navigation projects.

National Water Policy

The danger of a national water crisis exists and all action necessary should be taken to avoid such a crisis. We request that Congress establish a national water policy recognizing the importance of water in all aspects of our economy and with provision for an upstream flood prevention program which would encourage conservation of the top soil of our farm land and development of a long-range conservation program.

WATER RESOURCES MANAGEMENT PROJECTS

We urge the continuation of authority for the McClellan-Kerr Arkansas River Navigation Project until the eight remaining problems identified by the Little Rock District Corps of Engineers have been satisfactorily resolved, including deepening of channels, repairs at Dam #2, construction of a lock and dam at the mouth, and studies to identify and acquire, as may be appropriate, additional real estate along the navigation system.

Of great importance is completion of the Arkansas River Feasibility Study which is examining the needs for additional water projects to support the nation and our region.

Finally, Mr. Chairman, we strongly support the statements of the individual states, wherein they request adequate funding for planning and construction of vital projects. Funds invested today for multipurpose water projects will enhance our nation's future, save sizable expenditures in the future, and broaden the tax base throughout the entire nation.

Thank you very much, Mr. Chairman, for affording us this time, and we look forward to working with you and your colleagues as you develop water policies and programs for 1988.

THE ARKANSAS RIVER BASIN
INTERSTATE COMMITTEE

FROM ARKANSAS:

W. A. Gieringer, Pine Bluff-Jefferson County Port Authority, Pine Bluff, AR - (State Chairman) (Chairman of the Interstate Committee)
Wayne Bennett, Farmer and Businessman, Lonoke, AR
Charles Maynard, Sr., Vice President, Union National Bank of Little Rock, Little Rock, AR
Douglas W. Parker, Attorney, Ft. Smith, AR
Charles Steel, Sr., Vice President, Arkansas Power and Light Company, Little Rock, AR

FROM COLORADO:

Charles L. Thomson, General Manager, Southeast Colorado Water Conservancy District, Pueblo, CO - (State Chairman)
Lee Hancock, The High Line Canal Co., Rocky Ford, CO
John Javernick, Farmer and Rancher, Canon City, CO
William McDonald, Director, Colorado Water Conservation Board, Denver, CO
Ray D. Nixon, Colorado Springs, CO

FROM KANSAS:

James O. Foster, Boeing Military Airplane Co., Wichita, KS (State Chairman)
Roger Brown, President, Home National Bank, Arkansas City, KS
Frank W. Liebert, Attorney, Coffeyville, KS
Taylor Peckham, Peckham Insurance Agency, Augusta, KS
Arthur T. Woodman, Woodman-Architects, Wichita, KS

FROM MISSOURI:

Ted B. Evans, Southwest Missouri Bank, Carthage, MO
Douglas Mahnkey, Attorney, Forsyth, MO
R. Layne Morrill, Realtor, Shepherd of the Hills Realty, Kimberling City, MO

FROM OKLAHOMA:

Houston Adams, Commissioner of Water and Sewer Department, City of Tulsa, OK - (State Chairman)
E. R. Albert, Jr., Albert Equipment Company, Tulsa, OK
Robert S. Kerr, Jr., Oklahoma Water, Inc., Oklahoma City, OK
Harold B. Scoggins, Muskogee, OK
Fred G. Turner, Consultant, McAlester, OK

STATEMENT OF WALLACE A. GIERINGER, CHAIRMAN FOR ARKANSAS, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman and members of the Committee, my name is Wallace Gieringer. I serve as Executive Director of the Pine Bluff-Jefferson County Port Authority and Arkansas Chairman of the Interstate Committee. Other Committee members representing Arkansas are Messrs. Wayne Bennett, farmer from Lonoke; Charles Maynard, banker from Little Rock; Douglas W. Parker, attorney from Fort Smith; and Charles L. Steel, electric utility executive from Little Rock. We fully endorse the statement presented to you today by the Chairman of the Arkansas River Basin Interstate Committee.

We applaud the Congress on its forward thrust leading to the enactment of the Water Resource Development Act of 1986, PL 99-662. It forms the framework for Water Resources Development for the rest of this century. It will be a catalyst for self-sustaining investment of private capital in achieving the needed public works infrastructure for long-term economic well-being of our nation. Certain projects in our region are vital to the economic well-being of the region and our nation. We strongly recommend that you favorably consider the following projects in your budgetary deliberations.

* support for all funding included in the President's budget for the construction and operation and maintenance of the McClellan-Kerr Arkansas River Navigation System;

* continuation of construction authority for the McClellan-Kerr Arkansas River Navigation Project until the remaining problems identified by the Little Rock District Corps of Engineers have been satisfactorily resolved to include the engineering studies necessary to identify the work needs at Dam 2, the Arkansas-White cut-off, the resolution of the low water problem on the White River Entrance Channel, the deepening of the Arkansas-White River Canal, the Land Impact Study, and raising the North Little Rock Levee and Floodwall;

* funding to continue the urgently needed Arkansas River Basin Study to resolve problems related to navigation; flood reduction; and municipal, industrial and agricultural water supply for which the States of Arkansas and Oklahoma are currently negotiating study cost-sharing contracts. The study would include navigation channel enlargement in Lake Langhofer and Lake Dardanelle;

* your support of Corps authorization and funding of off-channel harbors in accordance with "Economic and Environmental Principles and Guidelines For Water and Related Land Resources Implementation Studies" (dtd March 1983) for regular feasibility and Section 107 navigation projects;

* support for all funding for the Fourche Bayou Flood Reduction Project in Central Arkansas;

* funding the North Little Rock, Arkansas, flood control study and the initiation of the Central Arkansas Flood Control and Water Supply Study;

* funding for the initiation of construction on the Section 205 project on Mill Creek at Fort Smith, Arkansas;

We are concerned that the expanded non-federal cost-sharing requirements will quickly result in only wealthy communities being able to participate in federal water programs. The poorer areas which have the greatest need for growth - but limited tax base - will be unable to participate because they can't meet the cost-sharing requirements! This problem needs to be addressed.

We thank you for the opportunity of speaking to you today and urge you to favorably consider our requests.

STATEMENT OF CHARLES L. THOMSON, COLORADO DELEGATION, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman, and members of this distinguished Committee, my name is Charles L. Thomson, and I am General Manager of the Southeastern Colorado Water Conservancy District, with Offices in Pueblo, Colorado. I submit this statement today in behalf of the other four members of the Colorado delegation, who were appointed by our former distinguished Governor, the Honorable Richard D. Lamm. My colleagues are Mr. John E. Javernick, farmer and rancher from Canon City, representing the Upper Arkansas Basin in Colorado. Mr. Lee Hancock, retired Superintendent of the High Line Canal Company near Rocky Ford, representing the Lower Arkansas Basin. Mr. William McDonald, Director, Colorado Water Conservation Board, and Mr. Raymond D. Nixon, retired Executive Director, Department of Public Utilities for the City of Colorado Springs, representing the municipal and domestic water users in the Basin. We are truly honored today, Mr. Chairman, to join our colleagues from the other great states of Arkansas, Missouri, Oklahoma and Kansas, who make up the Arkansas River Basin Interstate Committee, to appear before you as a unified group respectfully requesting appropriations for necessary water resource projects in our five states.

The members of the Colorado delegation have carefully reviewed the construction and operation and maintenance requests submitted by President Ronald Reagan for Projects in Colorado, and wholeheartedly endorse them as essential elements in the continued programs of the U.S. Bureau of Reclamation and U.S. Army Corps of Engineers.

In his Budget President Reagan recommends the following for continued construction on the Fryingpan-Arkansas Project in FY 1988:

Construction	$8.1 million
O & M	$1.705 million

The construction funds will provide for continued construction on the second phase of the Fish Hatchery at Pueblo Dam. A contract for this construction will be awarded within the next few weeks, and when completed will provide essential ponds and raceways for the production of a wide variety of sport fishes. The Superintendent at the Hatchery advises the first phase should be completed by the end of April, and they will have the capacity to incubate 55 to 60 million walleye eggs, which produce 38 to 42 million 2 day old fry. Other species which have been considered for the first year's production are tiger muskies and channel catfish. A maximum of 10,000 3 inch fingerlings could be reared in the existing facilities, and any excess would be made available for rearing at other warm water hatcheries and stock into public waters. Phase II will permit different culture facilities and practices, and projected annual production includes, among others, 200,000 black crappie, 1,400,000 McConaughy rainbow trout, 300,000 channel catfish and others.

Mr. Chairman, We would like to respectfully request that your Committee increase the appropriations for O & M by $100,000 to provide sufficient funds to properly maintain the extensive features of the Project. Many of the units are now 10 or more years old, and it would be counter productive to not keep them in good repair. This would be a wise investment of funds. features of the Fryingpan-Arkansas Project. Many of the units are now 10 or more years old, and it would be counter productive to not keep them in good repair. This would be a wise investment of funds. We would like to recommend that an additional $1 million be appropriated by the Congress to permit the Bureau to award contracts to complete the final phase of recreation facilities at Pueblo Reservoir. The public use of the recreation facilities at this particular reservoir has far exceeded even the most optimistic projections, and serious restrictions have to be imposed each year due to the lack of facilities. The additional funds will mean the final phase of the Fryingpan-Arkansas Project will be under construction.

Mr. Chairman, we are also very enthusiastic about the recommendations of the Administration as regarding Corps of Engineer Projects in Colorado as follows:

Fountain Creek and Tributaries North of Pueblo---------------------------------$140,000

This is an area upstream from Pueblo where Fountain Creek joins the Arkansas River, and is subject to extremely heavy rainfall in the form of cloudbursts, and wet snow storms. This creates serious problems along tributaries to Fountain Creek and Fountain Creek itself, and it is essential that an orderly study be made to determine ways to accommodate those emergencies.

Fountain Creek Flood Control Project at Pueblo----------------------------$2.5 million

When we appeared before you last year, Mr. Chairman, we were optimistic that the House and the Senate would be able to combine the best elements of HR 6 and S 1567, which would express the intent of Congress that essential water resource projects be constructed. We joined our counterparts throughout the United States on October 17, to rejoice when the House and the Senate overwhelmingly approved HR 6, now commonly known as Public Law 99-662. This legislation authorizes the construction of the much needed Fountain Creek Control Project at Pueblo, and the Administration Budget recommends $2.5 million to begin construction. This Project is located immediately adjacent to Interstate 25, and a mainline railroad track, which would be disrupted if there was a flood of the magnitude Pueblo has experienced in previous years. The City of Pueblo has officially agreed to provide the essential cost sharing funds, and we are most optimistic, Mr. Chairman, that this particular Project can be started late in 1987, heralding the intent of Congress to get water resource projects back on line.

Trinidad Lake O & M--$576,000

Mr. Chairman, I mentioned in the section "Fountain Creek and Tributaries North of Pueblo" the serious flood threats which exist in El Paso County. We are pleased to report that the Corps of Engineers has been asked by official local entities in the area to join with them in developing a Flood Warning System, and have already appropriated $200,000 toward such a study. We would appreciate your appropriating $75,000 which will enable the Corps of Engineers to lend its expertise in this field to the local officials, and create a Flood Warning System which will complement the flood routing studies along Fountain Creek and at John Martin Reservoir.

John Martin O & M--$1.332 million

This amount includes $164,000 to replace two obsolete comfort stations, and $50,000 for a Flood Routing Model to program possible floods above John Martin, including the operation of Pueblo Dam and Trinidad Dam. Many of you will recall when your former colleagues, the Honorable Frank E. Evans and Ray Kogovsek, represented the Third Congressional District, and called your attention to the need for a Permanent Pool at John Martin Reservoir, because when it was authorized in 1948 it was a Flood Control Project exclusively. The owners of irrigation water rights in the Arkansas Valley have now developed a Basinwide Water Management Program which provides for the additional storage of decreed water in John Martin Reservoir. During the past three years, the reservoir has reached a spilling stage of 355,000 acre-feet, and is seldom drawn down below 100,000 acre-feet. This has attracted a great deal of new recreation use, and the boat launching facilities are woefully inadequate. We would recommend, Mr. Chairman, that the Congress appropriate an additional $315,000 for the construction of a flexible boat launching ramp, which is sorely needed by the sportsmen who have discovered this goldmine.

Mr. Chairman, and members of the Committee, we once again want to sincerely compliment you and your predecessors for the foresight, wisdom and courage which each of you have demonstrated down through the years by providing funds for essential water resource management program throughout the United States. I would dread to think what problems would face our Nation in both water quantity and quality were it not for that foresight. We appreciate the opportunity to appear before you today, and stand ready to provide additional and more specific information upon your request.

STATEMENT OF JAMES O. FOSTER, CHAIRMAN, KANSAS GOVERNOR'S INTERSTATE COMMITTEE FOR THE ARKANSAS RIVER BASIN

Mr. Chairman and members of the Committee, my name is James O. Foster. I am Business Management Coordinator for the Boeing Military Airplane Company, Wichita, KS and Chairman of the Kansas Governor's Interstate Committee for the Arkansas River Basin. I am pleased to submit this statement today on behalf of myself and the other members of the Kansas Delegation.

My colleagues are Mr. Arthur T. Woodman, Architect, Wichita; Mr. Frank Liebert, Attorney-at-Law, Coffeyville; Mr. Roger Brown, Bank Executive, Arkansas City; Mr. Taylor Peckham, Insurance Executive, Augusta, Kansas. We are honored to join with our colleagues from the great State of Arkansas, Colorado, Missouri, and Oklahoma in appearing before you today to put forth our views on the appropriations and projects in Kansas and the Arkansas River Basin.

The Appendix lists the projects in the Kansas portion of the Arkansas River Basin. The figures are those in the President's budget which the Kansas Interstate Committee fully agree with and request that funding be granted.

I would like to call your attention to two construction projects which are particularly important to Kansas. The Great Bend Flood Control Project is most important to stop flooding of a major city in the western portion of Kansas. The Halstead Project is also an important project because Halstead is vital to the surrounding areas. This city contains a major regional hospital which provides medical services to the surrounding farming community. I would also like to call your attention to the Douglass Lake Project which is important because it contains the possibility of being a major municipal and industrial water supply in the future. It could assist not only the City of Douglass; but also Augusta, Newton, Winfield, and Arkansas City with a critical water supply for their continued growth. Growth of South Central Kansas could well depend on the Douglass Lake Project.

We request the necessary funds be appropriated to complete the comprehensive study of the Verdigris River Basin in Kansas and Oklahoma which has been undertaken and partly finished. The exact amount required is probably not certain, so we request $200,000.00 be appropriated for Fiscal 1988.

Mr. Chairman and members of the Committee, we wish to thank you for the sincerely dedicated manner in which you and your distinguished colleagues in the congress of the United States have dealt with the Water Resources Programs in allowing us to present our views and recommendations to you. We look forward with great expectations and hope for the future of water resource development in Kansas; with your assistance, it can be achieved.

KANSAS INTERSTATE COMMITTEE RECOMMENDATIONS
FISCAL YEAR 1987
ARKANSAS RIVER BASIN IN KANSAS

Project	Type of Project	Surveys	Advance Engn and Design	Construction	Operations & Maintenance
Kansas					
Arkansas River & Tribs. Great Bend, KS to Tulsa, OK	FDP	500,000			
Arkansas City, KS	FDP	450,000			
Clinton Lake, KS	FC				CCR
Council Grove Lake, KS	FC				CCR
Douglass Lake, KS	FC		500,000		
El Dorado Lake, KS	FC				CCR
Elk City Lake, KS	FC				CCR
Fall River Lake, KS	FC				CCR
Grand Neosho River, KS	FDP	300,000			
Great Bend, KS	FC			1,600,000	
Halstead, KS	FC			500,000	
Hillsdale Lake, KS	FC				CCR
John Redmond Dam & Reservoir, KS	FC				CCR
Kanopolis Lake, KS	FC				CCR
Marion Lake, KS	FC				CCR
Melvern Lake, KS	FC				CCR
Milford Lake, KS	FC				CCR
Pearson - Skubitz Big Hill Lake, KS	FC				CCR
Perry Lake, Ks	FC				CCR
Pomona Lake, KS	FC				CCR
Toronto Lake, KS	FC				CCR
Tuttle Creek Lake, KS	FC				CCR
Upper Little AR River Watershed, KS	FC	400,000			
Wilson Lake, KS	FC				CCR

CCR - Corps Capability Request

STATEMENT OF HOUSTON ADAMS, CHAIRMAN FOR OKLAHOMA, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman and members of the Committee, I am Houston Adams, Commissioner of the Water and Sewer Department of the City of Tulsa and the Oklahoma Chairman of the Arkansas River Basin Interstate Committee, from Tulsa, Oklahoma.

It is my privilege to present this statement on behalf of the Oklahoma members of our Committee in support of adequate funding for water resource projects in our area of the Arkansas Basin. Other members of the Committee appointed by the Governor are: Mr. E.R. Albert, Jr.; Mr. Robert S. Kerr, Jr.; Mr. Harold B. Scoggins, and Mr. Fred G. Turner.

Together with representatives of the other Arkansas Basin states, we fully endorse the statement presented to you today by the Chairman of the Arkansas River Basin Interstate Committee.

We appreciate the opportunity to present our views of the special needs of our State concerning several studies and projects.

We are pleased that the President included in his budget message for FY 1988 $4,600,000 in funds for the continued construction of Arcadia Lake, Oklahoma, and the $2,400,000 for Mingo Creek in Tulsa, Oklahoma. We urge that on authorized projects in Oklahoma, the study capability of the Corps of Engineers be funded in order to complete or to advance study completion.

We support all of the appropriation requests in the Federal Budget for the Arkansas River Basin.

There are nine projects omitted from the Federal Budget that, in our opinion, are critical to the continued development of water resources in Oklahoma. We are requesting the Committee add the projects and funding outlined herein.

After years of delay on new project authorizations, we applaud the passage of P.L. 99-662. We again express our concern, however, that many recommended projects will not be funded for lack of "up front" funding by local interests and, therefore, be deleted from the budget requests.

We ask the Congress to urge the Corps of Engineers to continue Advanced Engineering and Design on Sand Lake. Planning or AE&D should not be forsaken for imagined difficulties in future land acquisition. We recommend and urge your support of funding for continued study and construction of flood protection levees that have been identified as critical for the flood protection of Skiatook.

A recent BuRec study indicates a need to formulate and implement a long-range water and associated land resource development plan for the purposes of M&I water supply, specialty crop production, hydropower generation, recreation and flood control in the East-Central area of Oklahoma. We recommend funding for recommendations in the BuRec Report on East-Central Water Supply Study, dtd September 1986. We further urge the Subcommittee and the Congress to develop a more definitive position in regard to projects that have been determined to be "multi-purpose" and subsequently "authorized" by Congress. Viable and needed projects are held hostage by the ever-changing criteria. A case in point is Parker Lake. We urge funding

Mr. Chairman and members of the Committee, we wish to thank you for the sincerely dedicated manner in which you and your distinguished colleagues in the congress of the United States have dealt with the Water Resources Programs in allowing us to present our views and recommendations to you. We look forward with great expectations and hope for the future of water resource development in Kansas; with your assistance, it can be achieved.

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for this project which has been determined multi-purpose and has previously been authorized by the Congress.

We appreciate the concern the Subcommittee has shown in the past regarding a drastic reduction in funding of water resource development in this country. We support and encourage continued water development in order to assure adequate resources for America's future growth and prosperity.

We thank the distinguished Committee for the opportunity to present our views on Oklahoma's FY 1988 water development requirements.

FY 1988

OKLAHOMA -- Recommendations In Addition to President's Budget

PROJECT	FUNDS REQUESTED TO:
1. Arkansas Basin Chloride Control Project	Continue Advance Engineering and Design
2. Arkansas River Municipal, Industrial and Agricultural Study	Continue Study
3. Arkansas-Red River Basin Solar Energy Investigation	Continue Study
4. Big and Little Sallisaw Creek Navigation Project	Initiate Construction
5. Candy Lake	Continue Construction
6. Chikaskia Lake (OK-KS)	Initiate Advanced Planning
7. Sand Lake	Continue Advanced Engineering and Design
8. City of Skiatook Levees	Continue Advanced Engineering and Design and Construction
9. Parker Lake & East-Central Water Supply	Continue Advanced Engineering and Design and Initiate Construction

ARKANSAS RIVER BASIN
INTERSTATE COMMITTEE

March 30, 1987

U. S. House of Representatives
*****
United States Senate
IN ATTENDANCE

Glen Cheatham, Jr. - Director, Waterways Division, Oklahoma Department of Commerce, Muskogee, OK

James O. Foster - Director, Arkansas Basin Development Association; Kansas Chairman, Interstate Committee; Business Management Coordinator, Boeing Military Airplane Company, Wichita, KS

W. A. Gieringer - Chairman, Interstate Committee and Arkansas State Chairman; Director, Arkansas Basin Development Association; Executive Director, Pine Bluff-Jefferson County Port Authority, Pine Bluff, AR

J.Ronald Henderson - Manager of Marketing, Tulsa Port of Catoosa, Catoosa, OK

Tom W. Jolly - Executive Vice President, Arkansas Basin Development Association, Tulsa, OK

Charles D. Maynard - Interstate Committee; Director, Arkansas Basin Development Association; Sr. Vice President, Union National Bank, Little Rock, AR

Barry McKuin - President, Arkansas Basin Association; Director Arkansas Basin Development Association; Winrock Farms, Inc., Morrilton, AR

E. L. Morris - President, Arkansas Basin Development Association; Project Manager, Rockwell International, Tulsa, OK

Gary Newton - Director of Public Affairs, Little Rock Chamber of Commerce Little Rock, AR

Robert W. Portiss - Director, Arkansas Basin Development Association; Port Director, Tulsa Port of Catoosa, Catoosa, OK

Harold B. Scoggins - Interstate Committee; Director, Arkansas Basin Development Association; Muskogee, OK

Rudy Szewczak - Executive Vice President, Muskogee Chamber of Commerce, Muskogee, OK

Charles L. Thomson - Colorado Chairman, Interstate Committee; Director, Arkansas Basin Development Association; General Manager, SE Colorado Water Conservancy District, Pueblo, CO

Donal Venhaus - County Judge, Pulaski County Arkansas, Little Rock, AR

Arthur T. Woodman - Interstate Committee; Director, Arkansas Basin Development Association; Woodman-Architects, Wichita, KS

OKLAHOMA WATER RESOURCE DEVELOPMENT PROJECTS

STATEMENT OF HARVEY BOLLINGER, EXECUTIVE DIRECTOR, REDARK DEVELOPMENT AUTHORITY

Senator JOHNSTON. Our final witness today will be Mr. Harvey Bollinger with the RedArk Development Authority. Mr. Bollinger is the executive director.

Mr. BOLLINGER. Mr. Chairman, we thank you for this opportunity, and on behalf of the board of directors of RedArk Development Authority, I want to express our appreciation for this opportunity to speak before the committee to discuss our needs.

RedArk Development Authority is a public trust in Oklahoma established under state law for a 21-county area in east, central, and southeast Oklahoma. As you mentioned earlier, the four-state area of the Red River Valley Association has some of the highest unemployment of any areas in the country, and the 21 counties that we represent match up with Congressman Wadkins' congressional district.

It happens to be the highest unemployed area in the state of Oklahoma of any of the six congressional districts. We relate very well.

Senator JOHNSTON. Wes just told me about that. [Laughter.]

Mr. BOLLINGER. I bet you have heard about that before. In our role as a planning and implementing authority, RedArk works with three citizens waterworks associations in our area: The East Central Water Association, the Poteau/Deep Fork Association, and the Oklahoma delegation of the Red River Valley Association.

With me today are representatives from each of these three associations. A list of our attendees is attached to our testimony for the record. Sitting at the table with me today is Pierre Taron, the mayor of the city of Shawnee, representing the East Central Waterway Association; Tom Payne, representing Poteau/Deep Fork Association; and Bill Chapman, representing the Oklahoma delegation of the Red River Valley Association. We also have others in the room and I would like for all of them to stand at this time and be recognized.

Senator JOHNSTON. Welcome. Glad to have you here.

Mr. BOLLINGER. I am going to testify for our entire group in the essence of time as you indicated, so possibly we can speed things along very quickly. We have submitted written testimony and I will just orally summarize more of the key points to us.

The first of those I would like to talk about is the Water Resource Development Act of 1986. Even though cost-sharing provisions are generally outlined in this act, there still remains potential leeway for interpretation and formulation of guidelines.

WATER SUPPLY STORAGE ISSUES

We highly recommend that the federal government solicit state and local input toward implementation of equitable and realistic cost-sharing guidelines. Also, section 932 of Public Law 99–626 amending the Water Supply Act of 1958 for nonfederal repayment for water supply storage for Corps of Engineers projects. It has not changed the Bureau of Reclamation projects.

Public Law 99–662's amendment to the Water Supply Act grandfathered in existing water supply contracts which had been approved by the Secretary of the Army. But it did not address those contracts which were under negotiation either as existing Corps projects or as projects presently under construction.

In effect, this amendment has been interpreted by the Corps of Engineers as making cost-sharing provisions similar to those outlined in title I of the act applicable to contractor storage at four reservoirs that were existing or under construction prior to its enactment.

We feel cost-sharing provisions in effect at the time project construction is initiated should be recognized and applied to subsequent water storage contracts, including contracts for storage for reallocations of water supply in the future.

We urge Congress to clarify this issue by supporting formulation of guidelines in our legislation to this effect.

BUREAU OF RECLAMATION BUDGET

The second area that I would like to talk about is the fiscal year 1987 budget changes and the fiscal year 1988 budget request for the Bureau of Reclamation.

Obviously, Interior's new policy could easily be construed as a backdoor approach to the eventual doing away with the Bureau of Reclamation altogether by accelerating the construction of projects nearest completion and by phasing out the planning program which will obviously result in no new projects in the future.

Oklahoma is one of the 17 states that is involved in the Bureau of Reclamation activities. It has been very important to our area and we urge the Congress to resupport the retention of these programs.

SCS PROGRAMS

The third area that I would like to discuss is the Soil Conservation Service. The proposed fiscal year 1988 budget will reduce funds available to the Soil Conservation Service for the continuation of its programs and further result in the complete elimination of important programs. We strongly support the continuation of SCS programs and request Congress to provide sufficient funds for the continuation of these programs, especially Public Law 99–566 and R&D activities.

Another area that I would like to address is OMB. We feel that it is time that the operation of the federal government will return to the elected officials and taken out of the hands of the bureaucrats who are not responsible to the electorate. It is not right for OMB to be able to ignore the directions of Congress when the President has signed these actions into law.

Parker Lake, which I will touch on in a few minutes, is an example of OMB taking such actions. North Deer Creek is a soil conservation project which was recently approved by the House Committee of Public Works and Transportation as an authorized project.

It is pending now before the Senate. We would ask you, Senator, and other Senators, to support this particular project. It is very important to your area. We would also urge that this committee then provide sufficient funds to construct the project in the fiscal year 1988 appropriations for Public Law 99-566 programs.

EAST CENTRAL OKLAHOMA WATER SUPPLY STUDY

I just want to touch on about six or seven other projects by name. The east central Oklahoma water supply study, which is a Bureau project, was scheduled for completion in fiscal year 1988 but the budget includes zero for that figure. We feel that it is completely wrong, again, to spend 90 percent of the funds on a project and then decide not to complete it. We would ask for funds to complete that study in fiscal year 1988.

Parker Lake, again, I have mentioned, was authorized in the Water Resource Development Act of 1986. OMB has not allowed the Corps to move forward with that project, as the authorization indicated, and we would like to have funds provided so that that can be moved forward.

The Red River chloride control project has already been touched on. Another study that is very important to us is the Red River basin comprehensive study. It was scheduled, again, to be completed in fiscal year 1988. We would like to ask funds in the amount of $660,000 to complete that. It will be finished with those funds.

McGee Creek Lake is a Bureau of Reclamation lake. Again, it is scheduled for completion with the appropriation of $8.5 million. We would like to ask those funds to be provided so that we can, again, as you pointed out, you don't get the benefits from these projects if you don't finish them. It is important to go ahead and finish this one and complete it next year as scheduled.

The southeast Oklahoma water supply study and hydropower study are under review projects in our area. They, again, were scheduled for completion in fiscal year 1988 but the budget asked for zero. We would ask for $425,000 to be appropriated to complete these studies. We feel that is a small investment to get 100 percent of the study.

Another project, Denison Dam-Lake Texoma study, that is a Corps project. We would ask $500,000 to be provided to reanalyze this. This is a restudy of Lake Texoma. It is very important to Oklahoma, Texas, and Arkansas.

Sir, it is also very important to Louisiana, because it does have the only provision for the mainstream control of the Red River, which, again, is going to directly impact navigation to Shreveport and other places.

There are significant problems there that do need to be resolved. The Arkansas River and tributaries, south central and southeast Oklahoma, a comprehensive study, is a Corps study. It is also completed to be scheduled in fiscal year 1988. We would like to ask for $416,000 to complete that study.

The last study I would like to mention is the Arcadia Lake Corps project. We need $4.6 million to complete the construction of that. At this time we would like to thank you for the opportunity to be here and your consideration of these requests.

Senator JOHNSTON. Thank you very much, Mr. Bollinger. I appreciate you summing up your testimony right on time.

[The statements follow:]

Statement of Harvey Bollinger, Executive Director, Representing the RedArk Development Authority, East Central Water Association, Poteau/Deep Fork Association, and the Oklahoma Delegation—Red River Valley Association

TESTIMONY SUMMARY

PROJECT	REQUIRED ACTION BY COMMITTEE
1. Water Resources Development Act of 1986	a) Solicit State and local input on cost-sharing guidelines. b) Support legislation to clarify repayment contracts for existing and/or under construction lakes.
2. Bureau of Reclamation (BOR)	Fund to continue planning program.
3. Soil Conservation Service (SCS)	Fund to continue, especially PL-566 and RC&D.
4. North Deer Creek (SCS)	Fund for FY 88 New Construction Contract.
5. East Central OK Water Supply Study (BOR)	Fund $250,000 to complete in FY 88.
6. Parker Lake (COE)	Fund $7,000,000 to initiate construction.
7. Red River Chloride Control (COE)	Direct OSA to activate Area VIII evaluation program.
8. Red River Basin Comp. Study (COE)	Fund $660,000 to complete in FY 88.
9. McGee Creek Lake (BOR)	Fund $8,500,000 to complete, including roads
10. Southeast OK Water Supply (Kiamichi Hydropower Study (BOR)	Fund $425,000 to complete in FY 88.
11. Dension Dam-Lake Texoma Restudy (COE)	Fund $500,000 to reanalysis.
12. Arkanas River & Tribs, South Central & SE Areas of OK Comp. Study (COE)	Fund $416,000 to complete in FY 88.
13. Arcadia Lake (COE)	Fund $4,600,000 for construction.

Mr. Chairman, I want to express our appreciation for this opportunity to meet with this committee to discuss what we consider the most crucial question facing our nation, "how do we develop our nation's water resources in order to avoid a national water crisis?" We consider it an honor and a privilege to testify before this committee because we feel that without a strong multi-purpose national water development program, many of the other important aspects of our country's future, including the nation's defense program are really being built on an very unstable foundation. We also consider it a responsibility to work with you and the committee.

The RedArk Development Authority (RedArk) is a public trust established under the laws of the State of Oklahoma for a 21-county area of east central and southeast Oklahoma. The name RedArk is derived from the fact that the area lies immediately between two major water resources, the Red and the Arkansas Rivers. The purpose of RedArk is to undertake the maximum potential development of the area's water and natural resources with the objective of obtaining the maximum potential economic and employment benefits for the people of that area. With this purpose in mind, RedArk is vitally concerned with the development of not only what we consider our area's most vital resource, but also the most vital resource of our great nation--WATER.

East Central and Southeastern Oklahoma is rich in water and natural resources, but this area of Oklahoma has lagged far behind the state and the Nation in capitalizing the untapped potential of its natural resource base. The economic and job development potential of these resources has not as yet been of significant benefit to the people of the project area.

When one looks at the RedArk area and the poor economic and employment conditions that exist, and yet realizes the area is rich in water and natural resources, one has to come to the conclusion that there's no justifiable reason for the situation to exist. It is a realization of this untapped potential that makes it not only a privilege for us to appear before you to testify about water development in this area, but it actually becomes a mandate to do so.

To achieve its principal purpose, RedArk has initiated a comprehensive, multi-purpose, water resource development program. This program includes hydropower development, water supply, recreation, flood control, and water quality activities. In our role as a planning and implementing authority, RedArk works closely with the three citizens water associations in our area: East Central Water Association, Poteau/Deep Fork Association, and the Oklahoma Delegation of the Red River Valley Association.

With me today are representatives from each of these three water associations. A list of attendees is attached to this testimony for the record. However, before I turn to them to make short comments about specific needs of their individual area, I would like to draw your attention to certain items which are of general importance to the entire RedArk area and are specific concerns which I have.

The first of these is the Water Resources Development Act of 1986 (PL 99-662). PL 99-662 was signed into law by President Reagan on November 17, 1986. Non-federal cost share provisions set forth in this important piece of legislation include:

Flood Control - 25-50%, with a minimum of 5% cash up-front during construction.

Hydro-power - 100%, reimbursable

M & I Water Supply - 100%, up-front during construction of reimbursable with interest.

Agriculture - 35%, up-front or reimbursable

Recreation - 50%, up-front or reimbursable

Fish and Wildlife Enhancement - 0% for national benefits; 25% up-front or reimbursable if benefits are local

> Feasibility Level Studies - 50% during the course of the study, with a minimum of 25% in cash - up to 25% may be provided in-kind. (Excludes inland navigation studies involving dams, locks and channels.)

Even though these and other cost-sharing provisions are generally outlined in PL 99-662, there still remains substantial leeway for intrepretation and formulation of guidelines. We highly recommend that the Federal government solicit state and local input towards implementation of equitable and realistic cost-sharing guidelines.

Also Section 932 of PL 99-662 amended the Water Supply Act of 1958 for non-Federal repayment of water supply storage from Corps of Engineer projects (not Bureau of Reclamation) as follows:

> Reduced the time frame for non-Federal payback from 50 years from the date a contract was signed (within the life of the project) to 30 years from the date of project completion;
>
> Requires OMR costs to be paid on an annual basis versus when used;
>
> Eliminated the 10-year interest free period for future water supply storage;
>
> Provides for recalculation of the interest rate every five years versus a "fixed" rate computed as of the beginning of the fiscal year in which construction initiated.

PL 99-662's amendment to the Water Supply Act of 1958 grandfathered in existing water supply contracts which had been approved by the Secretary of the Army, but did not address those contracts which were under negotiation either at existing COE projects or at projects presently under construction. This omission has proven inequitable to those potential non-Federal sponsors who have supported particular reservoir projects and have provided assurances to reimburse the Federal government for water supply storage in accordance with cost-sharing provisions in effect at the time such commitments are made. In effect, this amendment has been interpreted by the COE as making cost-sharing provisions similar to those outlined in Title I of PL 99-662 applicable to uncontracted storage at COE reservoirs that were existing and/or under construction prior to its enactment.

We feel cost-sharing provisions in effect at the time project construction is initiated should be recognized and applied to subsequent water supply storage contracts, including contracts for storage reallocated to water supply in the future. We urge Congress to clarify this issue by supporting formulation of guidelines and/or legislation to this effect.

A second area of concern is the proposed FY 87 budget changes and FY 88 budget requests for the Bureau of Reclamation (BOR). Interior has proposed that the Bureau's enacted FY 87 budget or general investigations be redistributed. The proposal includes $12,206,000 for program redirection requirements to cover obligations to date, FINANCE RELOCATION and SEVERANCE COSTS, MAKE LUMP SUM LEAVE PAYMENTS, and meet similar requirements. In other words, to close offices and lay off personnel.

Notwithstanding a requested increase in total annual appropriations for the BOR's FY 88 budget, Interior has proposed to:

1) Selectively fund some BOR construction projects, allocating a larger share of total resources to maintain or accelerate their completion dates; and

2) Cut the BOR's General Planning Investigation budget approximately 61%.

The Administration previously proposed to merge the Bureau and the COE, but received a great deal of opposition from the Western States. Obviously Interior's new policy could easily be construed as a "back door" approach to eventually doing away with the BOR altogether - by accelerating construction of projects nearest completion and by phasing out their planning program, which will obviously result in no new projects in the future.

The BOR's construction and planning programs (including their Technical Assistance to the States Program) have been very valuable to the Nation's water resources management. We urge Congress to support retention of these programs.

The third area of concern is the Soil Conservation Service (SCS). The SCS program has made a significant contribution to the proper management of our national water and related land resources. We feel the continued proper management of such water and related land resources is still clearly in the national interest; and furthermore, that the national goals and objectives which lead Congress to establish the SCS program have not been totally accomplished. The proposed FY 88 Federal budget will reduce the funds available to the SCS for the continuation of its programs, and furthermore, result in the complete elimination of the PL-566, RC&D, Great Plains, River Basin, PL-539 and other important program components.

We strongly support the continuation of SCS programs and request Congress to provide sufficient funds for the continuation of these programs especially the PL-566 and RC&D activities.

The last area of concern I will mention is related to the Office of Management and Budget (OMB). We feel that it is time that the operation of the Federal government was returned to the elected official and taken out of the hands of bureaucrats who are not responsible to the electorate. It is not right for OMB to be able to ignore the direction of Congress when the President has signed a bill. Parker Lake which you will hear more about later is an example in our area of such action by OMB.

TESTIMONY ATTENDEES

	NAME	REPRESENTING*	PROFESSION
1.	Harvey Bollinger	RedArk	Executive Director
2.	Bill Chapman	OK-RRVA	Attorney & Rancher
3.	Thomas Payne	PDFA	Businessman & Rancher
4.	Mike Bollinger	PDFA	Student
5.	Wanda Payne	PDFA	Homemaker
6.	Pierre Taron	ECWA	Mayor, Shawnee,OK
7.	Ron Bourbeau	ECWA	City Manager, Shawnee, OK
8.	Wilf Stride	ECWA	City Engineer, Ada, OK
9.	Grant Dockrey	ECWA	Businessman
10.	Robert Knight	ECWA	Rancher

*RedArk - RedArk Development Authority
ECWA - East Central Water Association
OK-RRVA - Oklahoma Delegation of Red River Valley Association
PDFA - Poteau/Deep Fork Association

STATEMENT OF POTEAU/DEEP FORK ASSOCIATION

The Poteau/Deep Fork Association (PDFA) is a voluntary citizens' group interested in supporting water development projects and other natural resource development in the 10 counties of Oklahoma impacted by the Poteau and Deep Fork Rivers. These counties are: LeFlore, Haskell, Latimer, Pittsburg, McIntosh, Okmulgee, Okfuskee, Lincoln, Creek and Oklahoma. These 10 counties have an combined population of 816,000. The PDFA was formed for the purpose of promoting the orderly development of the water and natural resources in these two river basins.

The Deep Fork River is a tributary of the Canadian River; forms one of the major arms of Lake Eufaula, an existing COE multipurpose project; and ultimately empties into the existing McCellan-Kerr navigation channel on the Arkansas River. The river originates in the central part of Oklahoma near Oklahoma City. It is 220 river miles long with an average fall of two feet per mile. The channel is crooked and filled with obstructions. Flooding occurs because of inadequate channel capacity caused by much of the watershed having channel slopes as flat as one foot per mile and average velocities as low as one foot per second. These conditions allow flood flows to escape the channel, fill the lowlands, and deposit the sediment load which results in additional flattening of these lower reaches. Over time the flood area is expanded because of the sediment deposition. Average annual damages of crops and structures is over $200,000.

The flood plain has additional problems. Due to the high sediment load of the river and poor natural drainage, levees have formed adjacent to the river. These levees trap flood waters and do not allow drainage once the flood waters have subsided. There are 34,000 acres of potential farmland that remains wet for many months. It is important to note that these are not natural wetland areas but have been formed throughout the years as a result of man's activities in the basin and his lack of conservation and resource management programs. These conditions result in the overgrowth of trees and brush and make otherwise prime farmland unsuitable for agricultural purposes.

The Poteau River drains an area of about 1,900 square miles in eastern Oklahoma and western Arkansas. The drainage basin, which is about 1.2 percent of the drainage area of the Arkansas River, is roughly rectangular in shape and is mountainous. There are approximately three billion tons of coal reserves located in the basin and they are being mined at an increasing rate. In addition, approximately one million bushels of soybeans are produced each year in the area. Expanding industrial activity in the basin; especially near Ft. Smith, Arkansas and in LeFlore County, Oklahoma; are placing increasing demands on the area's ability to provide an ample quantity and satisfactory quality of municipal and industrial water. Three major industrial facilities have moved to LeFlore County this year. One facility, a co-generation plant, will employ 1,200 people during the four-year construction period and 130 people for the life of the plant's operation. This plant will consume approximately one million tons of coal per year. The facility also will house an CO2 plant and a paper recycling plant.

Navigation in this area is not a new concept. It was championed in the latter 1950s by the late Senator Robert S. Kerr as an original part of the McCellan-Kerr Navigation System to serve the major industrial center of Oklahoma City and the vast agricultural grain industry of western Oklahoma and the Texas panhandle. A report showing the project to be economically feasible was forwarded by the Tulsa District to the southwest division and hence to the Office of Chief of Engineers in the early 1960s. Unfortunately, the Board of Engineers for rivers and harbours rejected the report on the grounds that Tulsa District had over estimated shipments of petroleum products and coal that would be carried by the waterway. The project was then dropped. It is important to note that although this project did show an economc feasibility at one time, it was a single purpose (navigation) project.

The Oklahoma Water Resources Board recently completed a state water plan which included a project to transfer excess flood waters from the Robert S. Kerr Lake, a part of the existing navigation channel on the Arkansas River, the water eficient areas in metropolitian Oklahoma City and the tremendously productive agricultural areas of the high plains of Oklahoma. The agriculture of this area is heavily depended upon irrigation and is in jeopardy because of the eight-state ogallala ground water aquafer. Although technically feasible, the project did not prove economically feasible under current conditions and evaluation criteria. This plan called for water to be transported by non-navigation canals, fish stations and aqua ducks along a route closely paralleling the proposed navigation route. Again, this project was designed and evaluated as a single purpose project (water supply). To maximize the potential of this water resource, we must quit looking at it as single purpose projects and consider it from a multipurpose standpoint. This multipurpose approach would include ways of combining navigation and water supply plans as well as other purposes such as hydropower, recreation and flood control.

Several efforts are underway in the PDFA area to develop solutions for the problems and needs just presented. The following resolutions represent the PDFA's position regarding each of these efforts. The membership of the PDFA respectfully ask that your subcommittee honor the requests contained in these resolutions. Thank you for your time, attention, and continued support.

RESOLUTION I

POTEAU/DEEP FORK COMPREHENSIVE STUDY, OKLAHOMA

The Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive Study (authorized by PL 98-63, 30 July 1983) was initiated in October 1983. A reconnaissance report was completed by the Corps of Engineers in March, 1985. Feasibility studies are underway at full Federal expense, as directed by Congress, with completion scheduled for September, 1988.

The feasibility studies are concentrating on multiple-purpose development, including flood control and navigation. Navigation studies include the evaluation of the potential for extending navigation from the McClellan-Kerr Arkansas River Navigation System through Lake Eufaula to the McAlester, Oklahoma area and extension of navigation on the Poteau River to the vicinity of Panama, Oklahoma, is being reevaluated. Other specific items under study include combining a water conveyance system with the Deep Fork navigation plans, modification to Wister Lake and multipurpose projects which may be needed for the navigation/water conveyance plans.

The comprehensive study will recommend measures for: flood control; development of water supply, treatment and conveyance facilities; generation of hydroelectric power; development and enhancement of the recreational potentials and enterprises of the region; and improvement of the rivers for navigation and port site development. The study will also address which features of a comprehensive plan could best be accomplished by Federal, State or local entities and private interests.

The PDFA agrees with the position Congress has taken regarding no cost-sharing on this feasibility study. We appreciate the support which this project has received form your Subcommittee since its authorization. It is vital to our area. PDFA requests that Congress provide the funds to complete this study at full Federal funding in the amount of $419,000 in FY 88.

RESOLUTION II

ARCADIA LAKE, OKLAHOMA

Arcadia Lake is located at mile 213.8 on the Deep Fork River; in the metropolitan area of Oklahoma City and Edmond, Oklahoma; about one and one-half miles west of Arcadia, Oklahoma. Arcadia Lake was authorized by the Flood Control Act of 1970 for the purposes of flood control, water supply and recreation. Construction on the COE lake began in September 1980. The total estimated cost is $85.3 million. The entire project is about 90 percent complete. Impoundment was initiated in November 1986 and the project is scheduled for completion in February, 1990. The City of Edmond, as a local sponsor, has signed contracts with the Corps to repay the cost of water supply and one-half the separable recreation costs. This equals to about 57 percent of the total project cost. The two remaining recreation contracts have been delayed as a result of revisions requested by the local sponsor.

The PDFA wants to go on record as being a strong supporter of the continued funding for the construction of the Lake Arcadia project. We therefore request that this Committee appropriate $4,600,000 to the Corps to continue the construction of this project in FY 1988.

REPORT ON
USACE - OKARNG TEST MOVEMENT
McCLELLAN-KERR ARKANSAS RIVER WATERWAY
9-10 and 17-18 April 1986

. BACKGROUND:

a. Discussions between the parties began in early October 1985. These discussions were exploratory looking for ways to help each other. This resulted in a 4 hour waterborne reconnaissance of the McClellan-Kerr between Chouteau Lock & Dam, OK and Webbers Falls Lock & Dam, OK on November 1985. This reconnaissance was conducted aboard the USACE MV ahlequah and included OKARNG Officers, IWR and TD personnel.

b. Periodic contact continued. On 1 January 1986, MG Robert M. Morgan, the Adjutant General, formally requested support to:

(1) Use the waterway for transportation of equipment to support training activities,

(2) Use of the waterway for mobilization,

(3) Use of the waterway to conduct training, and

(4) Develop a defense plan for the waterway.

c. Periodic contact continued. During February 1986, Col. Robert N. Chase, Chief, Operations and Training Branch, officially requested support to move equipment on 9 April 1986, from Camp Gruber, Oklahoma to Fort Chaffee, Arkansas, and to return equipment via same route on 14 April 1986.

2. THE TEST MOVEMENT - DOWNBOUND:

a. On 8 April 1986 at about 1300 the USACE MV Sallisaw, one deck barge, 35' by 120', one crane barge, 35' by 150', arrived at Boudinot Safety Harbor, near Muskogee, Oklahoma, River Mile 382. The equipment was secured against the bank and an earthen ramp was built by OKARNG for drive-on loading. (Bank direct to barge.)

b. At 0700 on 9 April 1986, loading operations commenced. The following equipment was driven to the site for loading.

(1) Three MI06AI mortar carriers,

(2) Two CEV M728 combat engineer vehicles, and

(3) One AVLB M48A2 armored vehicle launched bridge.

c. The vehicles were ready for loading at 0730. VIP overflight scheduled for 1100, did not commence until 1130. Barge was loaded at about 1200. Actual loading time was 25 minutes.

d. The tow departed Boudinot Safety Harbor at 1230. Departure delay resulted from scheduled helicopter overflight by press, Corps, and a VIP contingent arranged by OKARNG. Actual Transit Schedule is attached.

e. The AVLB was used to unload the vehicles at Fort Chaffee. The bridge was placed with the AVLB sitting on the barge. Total unloading time was about one hour. No problems were encountered.

f. This equipment will be returned via same mode on 17-18 April 1986, as presently scheduled.

5. THE TEST MOVEMENT - UPBOUND:

a. On 17 April 1986 at about 0920, the MV Sallisaw and the two USACE barges arrived at the Fort Chaffee, Arkansas site, River mile 289.0. The barges were secured against the bank. A CEV was used to level an existing embankment and to push an earthen ramp up to the bow of the barge. The same equipment was driven directly onto the barge. The AVLB was not used in the loading. A pickup truck was lifted onto the barge with the barge mounted crane. The tow departed at about 1030. Most of the time used here was leveling the embankment.

b. The tow arrived at the USACE-USCG Terminal in the R.S. Kerr Pool at 2104 and was secured for the night. A Cadre of 6-10 Guard troops slept on the barge.

c. The tow departed the Terminal at about 0610 on 18 April 1986. At 1255 the tow arrived at Boudinot Safety Harbor near Camp Gruber. The tow was secured against the bank and the equipment was driven off the barge onto an earthen ramp. The vehicles proceeded to the Gruber compound, a distance of about 2 miles, and arrived at 1335. The MV Sallisaw departed at 1328, returning to the USACE-USCG Terminal at R.S. Kerr. No problems were encountered.

4. ON GOING ACTIVITY:

OKARNG is planning additional movements. They want to move the following on 6-9 June 1986 (Downbound) and 14-28 June 1986 (Upbound):

a. Forty 4x4 trucks,
b. Two M48 tanks,
c. Six motor graders,
d. Two crawler cranes,
e. Nine scrapers, and
f. Other equipment not specified.

These movements would include use of the roll-on/roll-off facility at the Port of Catoosa and loading/unloading at Boudinot Safety Harbor to Fort Chaffee and return. OKARNG will use commercial towing services for these movements. They have asked the Director, Port of Catoosa to identify potential towing services. They request continuing technical advice and support from USACE-TD.

USACE - OKARNG TEST MOVEMENT
McCLELLAN-KERR ARKANSAS RIVER WATERWAY
ACTUAL TRANSIT SCHEDULE - DOWNBOUND
9-10 April 1986

Location	Time of day		River Mile	River Flow		Distance Miles	Speed MPH	Elapsed Time Minutes
	Call for Lockage	Depart Lock		CFS	Time			
9 April 1986								
Boudinot Safety Harbor		Depart site 1230	382.0	(Use Webbers Falls)		N/A	N/A	-
Webbers Falls L&D	1355	1450	366.5	50,200	0900-1700	15.5	7.2	140
USACE-USCG Terminal R.S. Kerr Reservoir	1800*	0600**	341.0	89,000	1800	25.5	4.2	190
10 April 1986								
R.S. Kerr L&D	0700	0756	336.0	40,800	0700	5.0	5.0	116
W.D. Mayo L&D	1105	1138	319.5	47,500	1100	16.5	4.15	222
L&D 13 (Arkansas)	1310	1355	292.5	74,900	1300	27.0	3.41	137
Fort Chaffee Site	1415	1520	289.0	41,000***	1400	3.5	10.2	85

* Arrival for Night.
** Morning of 10 April - depart terminal.
*** At L&D 13.

SUMMARY

93 miles at average speed 6.0 mph (includes lock time).

USACE - OKARNG TEST MOVEMENT
McCLELLAN-KERR ARKANSAS RIVER WATERWAY
ACTUAL TRANSIT SCHEDULE - UPBOUND
17-18 April 1986

Location	Time of day		River Mile	River Flow		Distance Miles	Speed MPH	Elapsed Time Minutes
	Call for Lockage	Depart Lock		CFS	Time			
17 April 1986								
Fort Chaffee Site	Depart site	1030	289.0	(use L&D 13)		0	0	-
L&D 13 (Arkansas)	1100	1137	292.5	36,800	1100	3.5	3.0	67
W.D. Mayo L&D	1620	1647	319.5	36,000	1600	27.0	6.0	250
R.S. Kerr L&D	1956	2020	336.0	38,800	2000	16.5	4.2	213
USACE-USCG Terminal R.S. Kerr Reservoir	2104*		341.0			5.0	6.6	44
18 April 1986								
USACE-USCG Terminal R.S. Kerr Reservoir	depart site	0610	341.0	40,000	0600	-	-	-
Webbers Falls L&D	1000	1040	366.5	27,200	1000	25.5	5.4	270
Boudinot Safety Harbor	1255		382.0	(use Webbers Falls)		15.5	6.6	135

* Arrival for Night.

SUMMARY

93 miles at averge speed of 5.4 mph (including lock time).

STATEMENT OF OKLAHOMA DELEGATION, RED RIVER VALLEY ASSOCIATION

Mr. Chairman, 12 of the 21 counties in the RedArk area lie within the Red River Basin. We in Oklahoma are concerned with several projects in the Red River Valley. This is appropriate since almost half of the State of Oklahoma is in the drainage basin of the Red River. We, as the Oklahoma Delegation, represent one of the four states which are members of the Red River Valley Association. In fact, two members of the group present today serve on the Board of Directors of the Association. I also hold the position of Vice President of the Association for Oklahoma. The Red River Valley Association is a voluntary group of citizens banded together to advance the economic development and future well-being of the citizens of the four state Red River Basin area in Arkansas, Louisiana, Oklahoma and Texas.

The Association has for 62 years done notable work in the support and advancement of a program to develop the land and water resources of the valley to the beneficial use of all the people. To this end, the Red River Valley Association offers its full support and assistance to the various Port Authorities, Chambers of Commerce, Economic Development Districts and other local governmental entities in developing the river basin.

The resolutions contained herein were developed by the Oklahoma Delegation of the Red River Valley Association (OK-RRVA) and represent the combined concerns of the citizens of the Oklahoma portion of the Red River Basin as they pertain to the goals of the Association, specifically:

....Economic and Community Development
....Flood Control
....Bank Stabilization
....A Clean Water Supply for Residential, Commercial, Industrial and Agricultural Use
....Solar and Hydroelectric Power Generation
....Navigation

The OK-RRVA is aware of the constraints on the Federal budget, and have kept those restraints in mind as the resolutions were adopted. Therefore, and because of the far-reaching regional and national benefits addressed by the various projects covered in these resolutions, we urge the members of Congress to review the materials contained herein and give serious consideration to funding the projects at the levels requested.

RED RIVER CHLORIDE CONTROL RESOLUTION

Construction of a ring dike to test application of backhead as means to suppress individual brine springs was completed at Estelline Springs, Texas (Area V) in 1964. Today, the structure is operated as a permanent control installation and successfully contains approximately 80% of the total chloride load emitted from Area V. Passage of the 1966 and 1970 Flood Control Acts (PL 89-789 and PL 91-611) authorized construction of measures to ocntrol the natural salt pollution from Areas VI, VII, VIII, IX, X, XIII, XIV, and XV in the basin, subject to the provision that construction on the project could not be started until approved by the Secretary of the Army. congress authorized construction of this project with removal of natural pollution (salt) as a Federal responsibility and the removal of man-made pollution (salt) a responsibility of non-Federal interest. Initiation of construction of Area VIII on the Wichita River prior to the required approval by the Secretary of the Army was authorized by the 1974 Water Resources Act. Construction on Area VIII, which includes the Truscott Brine Lake, was begin in February 1977, and is nearing completion.

The approval of the Red River Chloride Control report, submitted to the Secretary of the Army in August 1977, was deferred pending an economic re-analysis to be conducted by the Corps of Engineers. The economic re-analysis, which reaffirmed the economic feasibility, was submitted to the Secretary of the Army for final action in 1981. However, the Secretary took the position that present administrative policy dictates that non-Federal interests must commit to repay a major portion of the total project costs before further construction could be approved.

A "compromise" on this issue was set forth in Section 1107 of the Water Resources Development Act of 1986, which provides that construction of the remaining project elements will be cost shared in accordance with the requirements of Area VIII and such construction shall commence upon transmittal of a report to the Secretary of Army and to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportion of the House of a favorable findings of the effectiveness of the operation of Area VIII. This report is to be developed by a panel consisting of representatives from the USGS, the Texas Water Commission, the National Academy of Sciences and two persons to be appointed by the Secretary with concurrence of the governors of Texas and Oklahoma. The panel's report must be submitted no later than three years after the date Area VIII commences operation.

The OK-RRVA understands that the Secretary of the Army has the lead in setting up the panel designees, but has not yet taken any action. We strongly recommend that the Secretary discharge implementation of the Area VIII evaluation program and appoint Glenn Sullivan, Secretary of Natural Resources for the State of Oklahoma, who has been recommended by the Governor of Oklahoma.

RED RIVER BASIN COMPREHENSIVE STUDY RESOLUTION

The Red River Basin Comprehensive Study, authorized by PL 98-63, 30 July 1983, was initiated in October 1983. A reconnaissance report was submitted in March 1985 by the Tulsa District of the Corps of Engineers for the Oklahoma portion of the Basin. Feasibility studies for the Oklahoma portion are underway at full Federal expense, as directed by Congress, with completion scheduled for September 1988.

The comprehensive study will recommend measures for: flood control, development of water supply, treatment and conveyance facilities, generation of hydro-electric power, development and enhancement of the recreational potentials and enterprises of the region, and improvement of the rivers for navigation and port site development. The study will also address which features of a comprehensive plan could best be acomplished by Federal, State, local entities and private interests.

The OK-RRVA agrees with the position Congrėss has taken regarding cost-sharing on this project. We appreciate the support which this project has received from your subcommittee since its authorization. It is vitally important to our area. OK-RRVA requests that Congress provide the funds to complete this study at full Federal funding in the amount of $660,000 in FY 88.

LUKFATA PROJECT RESOLUTION

Lukfata Lake on Glover Creek in central McCurtain County in southeastern Oklahoma was authorized by the Flood Control Act of 1958 as a component of the six-reservoir system for flood control in the Little River Basin. All of the reservoirs except Lukfata Lake have been completed; without the Lukfata project, the system does not function as planned.

In the Energy and Water Development Appropriations Bill of 1982, HR97-177, 14 July 1981, the Committee on Appropriations directed the Corps, within the limits of available funds, to study the potential of hydropower generation at Lukfata Lake. A preliminary study was completed in May 1983. The study showed that a 65 mega-watt hydropower plant could be developed as a part of the project at the lower site.

Consultations between the U.S. Fish and Wildlife Service and the Tulsa District Corps of Engineers have resulted in an opinion by the USFWS that the proposed project would adversely affect an endangered specie, the leopard darter and its habitat, therefore threatening its continued existence. After reviewing the opinion, Tulsa District is considering a request for exemption from the Endangered Species Act. However, additional studies need to be accomplished to obtain information that could be an important element in designing a workable mitigation plan for inclusion in the exemption request. Those studies will be completed as a part of the Red River Basin Comprehensive Study. The OK-RRVA supports continued studies of the Lukfata project by the Corps of Engineers to resolve conflict between endangered species and development of the project.

McGEE CREEK RESOLUTION

McGee Creek Lake was authorized for construction, operation, and maintenance in accordance with Federal Reclamation Laws by PL 94-123, September 28, 1976. McGee Creek Lake is located in Atoka County in Southeastern Oklahoma. McGee Creek is a northern tributary of the Red River. The damsite is about 3.4 miles about the confluence of McGee and Muddy Boggy Creeks. The project was authorized for water supply, flood control, and recreation. Construction began on the project in June 1982.

The OK-RRVA strongly supports continuation of this project, and the concept demonstrated in the project of maximum development of the local economy by maximum utilization of opportunities provided by the project's development. The Association recommend the members of the McGee Creek Authority to continue to cooperate with the basin interests to fully develop the economic potential of this project for the benefit of the project area and the nation.

The dam is nearing completion with the entire project scheduled for completion in FY 88. In FY 87 the Bureau transferred the money Congress appropriated to another Bureau project. The OK-RRVA appreciates the action you have taken in the 87 Supplemental Appropriation Bill to require the Bureau to spend the $7,755,000 appropriated on this project. In order to keep this project on schedule and to fully realize the previous investment, OK-RRVA is asking that $8,500,000 be provided to complete this project in FY 88, including all roads which are associated with the project. We also ask that the Bureau be instructed to utilize these funds entirely and only on the McGee Creek project.

SOUTHEAST OKLAHOMA WATER SUPPLY STUDY AND KIAMICHI HYDROPOWER STUDY

The Bureau of Reclamation was authorized to conduct these two (2) studies by PL 93-360, dated July 16, 1984, entitled "Appropriations for Energy and Water Development for FY 85". These studies are companion studies being done by the Bureau as input to the Corps' Red River Comprehensive Study. They are scheduled for completion by September 1988. The Department of Interior proposed program redirections for FY 87 which would have terminated these two studies. Although this proposal was changed as a result of Congressional opposition, the FY 88 budget includes no funds for the completion of these studies as scheduled. To terminate these two studies within one year of their scheduled completion dates appears short-sighted and a mismanagement of Federal funds. OK-RRVA therefore asks that $ 425,000 be provided in FY 88 to complete these two studies.

DENSION DAM-LAKE TEXOMA RESTUDY

The Denison Dam - Lake Texoma project was completed in 1944. Authorized project purposes included flood control, hyroelectric power generation, navigation, regulation of the flow of the Red River, and other beneficial purposes. A total of 150,000 acres-feet of storage is presently allocated for water supply, although it was not an original project purpose. Legislation authorizing the Secretary of Army to reallocate an additional 300,000 acre-feet of hydropower storage to water supply storage was included in the Water Resources Development Act (WRDA) of 1986. designation of recreation as a project purpose was also included in the WRDA of 1986.

Authority for a restudy was provided in resolutions adopted by the U.S. Senate Public Works Committee in 1960 and 1965. The purpose of the restudy is to determine whether it would be advisable to modify the existing project giving consideration to future water resource needs of the area. These include recreation, irrigation, municipal and industrial water supply, aditional hydropower, sediment control, and other purposes in addition to the authorized purposes.

A survey report was submitted to the Southwestern Division (SWD) by the Tulsa District (TD) in December 1986. However, this report does not adequately address the many conflicts between existing and future uses (purposes) which have risen to a very high level of intensity and awareness at the current time. The RRVA requests that the report be returned to TD for reanalysis and revisions and that $500,000 be provided in the FY 88 Energy and Water Appropriations Bill for the COE to carry out the restudy of Lake Texoma including a joint study effort with the Bureau of Reclamation to consider two upstream management and multipurpose lakes.

STATEMENT OF THE EAST CENTRAL WATER ASSOCIATION

The East Central Water Association is a voluntary group of citizens banded together in the interest of supporting water development projects and other natural resources development in the east central counties of Oklahoma. The ECWA promotes the orderly development of the area water and natural resources to advance the economic development and future wellbeing of the citizens of the five-county area. These Oklahoma counties are: Coal, Hughes, Pontotoc, Pottawatomie and Seminole.

The five counties which comprise the East Central area have a combined population as in the 1980 census of approximately 134,000 people. This five-county area is the most rapidly growing area in southeastern Oklahoma. It is an area which is not only experiencing significant population growth but also major expansion in the manufacturing and industrial sectors. Cities in these east central counties, such as Ada, Shawnee, Tecumseh, Seminole, Wewoka, Coalgate and Holdenville are in extreme need of an adequate municipal and industrial water supply.

However, at this time, there are no existing, under construction or authorized Corps of Engineers or Bureau of Reclamation lakes within the east central area. In fact, there are not any lakes which have a significant water supply storage capability within the area. Water rationing has been an regular occurrence over the past several summers for nearly all the communities within this area.

This critical need for future water supply is clearly demonstrated by the competition for the municipal and industrial water supply storge to be provided by the proposed Parker Lake located in the northern part of Coal County. Although construction of this lake has not even been started, applications for water rights already exceed by 10 times the amount of water which will be available from the lake.

The East Central Water Association, at its annual meeting (21 March 1987 - Ada, Oklahoma), adopted the following resolutions (A through C) and hereby ask that this subcommittee consider the request of each. Enclosed immediately following the above mentioned resolutions are resolutions adopted last year by the governing bodies of several of the communities in the area in support of Parker Lake. Also are letters from area officials in support of the North Deer Creek project which has been authorized by the House and is pending authorization in the Senate. The membership and area represented by the East Central Water Association thanks you for your attention and the opportunity to testify before this subcommittee.

RESOLUTION A

NORTH DEER CREEK WATERSHED

WHEREAS, the Soil Conservation Service (SCS) has completed the Watershed Plan and Environmental Impact Statement for the North Deer Creek Watershed; and,

WHEREAS, said plan consists of the the following project measures: (1) multipurpose structure for retarding flood water and for municipal, industrial and recreation water storage; (2) recreation facilities; and (3) mitigation measures, AND FURTHERMORE the total project cost is estimated to be $15,091,210 of which $3,223,680 will be provided from PL 83-566 funds and the remaining $11,867,530 from other funds, AND FURTHERMORE the project has a benefit-cost ratio of 1.06:1; and,

WHEREAS, the Cleveland County Conservation District, Oklahoma County Conservation District, Shawnee Conservation District and Pottawatomie County Development Authority, as local sponsors, have agreed to the plan and proposed cost sharing agreements; and,

WHEREAS, this plan has been approved by the Secretary of Agriculture and the Office of Management and Budget (OMB); AND FURTHERMORE, the House Committee on Public Works and Transportation has authorized the project.

NOW THEREFORE BE IT RESOLVED, the East Central Water Association (ECWA) strongly supports this project and requests the Senate Committee on Environment and Public Works to authorize the project; AND BE IT FURTHER RESOLVED, the ECWA requests OMB to approve this project as a new construction start in 1988 and BE IT FURTHER RESOLVED that the ECWA requests the HOUSE AND SENATE APPROPRIATIONS COMMITTEES to include sufficient funds to construct this project in the 1988 appropriations for the PL 83-566 program; AND BE IT FURTHER RESOLVED the ECWA requests the Washington office of the USDA-SCS to apportion sufficient funds for said project to Oklahoma and that the Oklahoma State Office of the USDA-SCS establish this as its first priority for PL 83-566 funds within the State of Oklahoma in order for construction of the North Deer Creek Watershed to begin as soon as possible.

RESOLUTION B

EAST CENTRAL OKLAHOMA WATER SUPPLY STUDY

WHEREAS, the Bureau of Reclamation was authorized to conduct this study by PL 93-360, dated July 16, 1984, entitled "Appropriations for Energy and Water Development for FY 1985", AND FURTHERMORE the Energy and Water Development Appropriations Act, 1987, (Oct. 15, 1986) provided $250,000 for the continuation of this study; and,

WHEREAS, the purpose of this study is to serve as a guide toward the most beneficial development of the water and related land resources for municipal and industrial (M&I) water supply system, hydroelectric power, navigation, irrigation, flood control, recreation, and environmental enhancement purposes, AND FURTHERMORE, that this study covers all or parts of Coal, Hughes, Lincoln, Okfuskee, Pontotoc, Pottawatomie and Seminole counties, an area of Oklahoma in which there are NO existing, under construction or authorized Corps of Engineers or Bureau of Reclamation lakes or any lakes with a significant water supply storage capability; however an area in which such cities as Ada, Shawnee, Tecumseh, Seminole, Wewoka, Coalgate and Holdenville are in extreme need of an adequate M&I water supply and where water rationing has been a regular ocurrence over the past several summers; and,

WHEREAS, the proposed FY 88 Federal Budget for the Southwest Region of the Bureau of Reclamation includes NO funds for the continuation of this study, AND FURTHERMORE the Bureau of Reclamation has testified before Congress that the work elements included in the Plan of Study for this project can not be completed with FY 87 funds, thereby resulting in this study being stopped without conclusions or recommendations.

NOW THEREFORE BE IT RESOLVED, the East Central Water Association (ECWA) strongly supports this study effort and requests that

Congress appropriate $250,000 the FY 88 Energy and Water Appropriations Act for the completion of this study as scheduled in September 1988.

RESOLUTION C

PARKER LAKE, OKLAHOMA

WHEREAS, the Corps of Engineers completed an Interim Survey Report on Parker Lake in 1975 as an early action project recommended in the Red River Below Denison Dam Comprehensive Basin Study, AND FURTHERMORE, the project was recommended for construction by the Chief of Engineers (OCE) in his 30 May 1980 report; AND FURTHERMORE, a report recommending the construction of the project was approved by the Office of the Secretary of the Army (OSA) and transmitted to the Water Resources Council on 15 January 1981 and was returned to the Assistant Secretary of Army (CW) in October 1981 as a result of the Water Resources Council being discontinued, AND FURTHERMORE, said report with a recommendation to construct the project was transmitted to the Office of Management and Budget (OMB) on the 25 April 1985 by the Assistant Secretary of the Army (CW).

WHEREAS, said report recommends Parker Lake as a multipurpose project on Muddy Boggy Creek which would provide protection against the standard project flood, and a dependable water supply of 42 million gallons per day for municipal and industrial (M&I) purposes, recreation lands for future use, and fish and wildlife mitigation AND FURTHERMORE, the total project cost is estimated at $48,100,000 and has a benefit-cost ratio of 1.2:1; and

WHEREAS, the Parker Lake project was authorized for construction by PL. 99-88, 15 August 1985 (FY 85 Supplemental Appropriation.

WHEREAS, on the 12 December 1985, the OMB sent a letter to OSA stating that there is no Federal interest in constructing Parker because its flood control benefits are only eight (8) percent of the total benefits; however, OMB has no objection to the completion of on-going planning and engineering by the COE, with the results turned over to local interest for their review and action.

WHEREAS, the Congress reaffirmed a Federal interest in the construction of Parker Lake by including its authorization in Title VI of the Water Resources Development Act of 1986, (Oct. 1986); and,

WHEREAS, the Energy and Water Development Appropriations Act, 1987, (Oct. 15, 1986) provided $1,000,000 for the General Construction efforts on Parker Lake which are being used to complete certain Design Memorandums, AND FURTHERMORE, the COE testified before Congress that said FY 87 funds were not sufficient to complete all Design Memorandums necessary to construct the project, AND FURTHERMORE, the proposed FY 88 Federal Budget includes no funds to complete the remaining Design Memorandums or to initiate construction.

NOW, THEREFORE BE IT RESOLVED, that the East Central Water Association (ECWA) contends that (1) the OSA recommended the project for construction as a multipurpose project, (2) there exists no Congressionally authorized criteria or guidelines which allow OMB to declare a project with only eight (8) percent flood benefits a single purpose project and therefore there to be no Federal interest in its construction, (3) that Congress declared a Federal interest in Parker Lake by authorizing it for construction in Title VI of the Water Resources Development Act of 1986 and (4) that OMB has no authority to direct the OSA to not fulfill its responsibilities as established by acts of Congress, AND BE IT FURTHER RESOLVED that the ECWA request Congress to (1) direct the OSA to comply with the OMB directions to complete all Design Memorandums and (2) to provide funds in the FY 88 Energy and Water Development Appropriations Bill in the amount of $7,000,000 to initiate the construction of Parker Lake as per the direction of Congress in the Water Resources Development Act of 1986.

RESOLUTION OF WEWOKA, OKLA.

RS 85-86-8

WHEREAS, The City of Wewoka with a population of 5,480, serves as the County Seat of Seminole County, which has a population of 27,473; and

WHEREAS, The City of Wewoka has the responsibility to provide water for the residential, commercial and industrial needs of its citizens and in addition, is the source of water for three rural water systems; and

WHEREAS, The City of Wewoka and the entire County of Seminole have for several years experienced both quality and quantity problems with its existing water suppliers; and

WHEREAS, Alternative surface water sources do not exist and extensive pollution of the ground water aquifiers exist; and

WHEREAS, Parker Lake has long been identified as a future source for municipal and industrial water for Wewoka and all of Seminole County;

NOW THEREFORE, BE IT RESOLVED, The City Council of the City of Wewoka asked that Congress authorize and fund the construction of Parker Lake as soon as possible.

PASSED AND APPROVED by the Mayor and City Council of Wewoka, Oklahoma, this 8th day of April, 1986.

Leodus Banks
Mayor

STATEMENT OF PIERRE F. TARON, MAYOR, SHAWNEE, OKLA.

Twenty years ago W. B. Moran and I made our first trip to Ada to testify in favor of the construction of Parker Reservoir. Through the administration of several city managers and three mayors, Shawnee has continuously maintained a high degree of interest in the construction of this reservoir. Over these same years, Shawnee representatives have participated in the annual testimony trips to Washington to appear before the House and Senate Committees always in support of this project.

As of this writing, the project has been approved by the House and the Senate, and the President has signed the funding bill. However, the matter has been held up by the Office of Management & Budget stating that there is no Federal interest in this project. It has been a mystery to me how a project or program can be approved by our elected official and then have the ultimate outcome determined by a group of bureaucrats who are not responsible to the electorate. It is extremely difficult for us to understand how OMB can override a congressional authorization bill. However, since it has, I would be extremely appreciative if you could do whatever is necessary at this time to put this project back on track.

Senator, I have a very high regard and deep appreciation for the manner in which you represent us in Washington. I thought I might take this opportunity to mention this as I have felt this way for several years. I thank you so very much for all you have done for us here in Shawnee and I once again would ask your assistance in this matter.

I am writing to you on behalf of the people of Shawnee and Pottawatomie County, Oklahoma in regards to our future. We have a critical interest in the development of the proposed North Deer Creek Reservoir on the the North Deer Creek Watershed in Pottawatomie County, Oklahoma.

Our future, growth and well-being depends on an adequate water supply. It is my understanding that the project is currently held up in the Senate Committee on Environment and Public Works. I respectfully request that you use your good influences in getting this critical project back on track. Your support of this matter will be truly appreciated.

RESOLUTION NO. 5323

A RESOLUTION EXPRESSING THE CONTINUED INTEREST OF THE CITY OF SHAWNEE, OKLAHOMA IN THE DEVELOPMENT OF PARKER RESERVOIR AS A SOURCE OF WATER FOR ITS CITIZENS; AND DECLARING AN EMERGENCY.

WHEREAS, one of the most serious problems facing the City of Shawnee is an inadequate supply of raw water; and

WHEREAS, due to this inadequacy, the City has had to implement a water rationing plan on several occasions; and

WHEREAS, various alternatives have been considered to supplement the present source of water; and

WHEREAS, it appears the development of Parker Reservoir southeast of Ada, Oklahoma, in Pontotoc County, is a practical alternative for the City of Shawnee in obtaining raw water to supplement its needs.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND BOARD OF COMMISSIONERS OF THE CITY OF SHAWNEE, OKLAHOMA that said City hereby expresses its continued interest and support for development of Parker Reservoir as a supplemental source of raw water for its citizens, as well as such for other communities and cities in the area.

BE IT FURTHER RESOLVED that the City urges the federal government to provide assistance for said Parker Reservoir Project so that the U. S. Corps of Engineers can proceed posthaste to expedite construction to allow the City of Shawnee and others to be receiving water from said source at the earliest possible date.

BE IT FURTHER RESOLVED that for the preservation of the public peace, health and safety, an emergency is hereby declared to exist by reason whereof this resolution shall be in full force and effect immediately upon its adoption.

PASSED AND APPROVED this 7th day of April, 1986.

ACTING MAYOR

STATEMENT OF RON BOURBEAU, CITY MANAGER, SHAWNEE, OKLA.

As discussed with you on past occasions, the City of Shawnee's water shortages are at a critical stage. The plan that the City has undertaken to solve its immediate problems are to complete the Deer Creek Project through the use of the Pott County Development Authority which is the entity that provides water to the rural community. The water that they are selling, of course, is water being sold to them by the City of Shawnee. In addition to that we have the long term plan which calls for the City to participate in the development of Parker Reservoir at which point then the City's future needs could be met for many years to come.

The immediate needs of the City are to attempt to as quickly as possible increase our dependable daily yield of water. The City's current dependable yield is 3,000,000 gallons per day and our average daily flow is 4,000,000. In the last three years because of unusually heavy rainfall we have not had to ration water. However, under normal circumstances the City is 1,000,000 gallons of water per day short in its supply. Our most reasonable solution to this problem is the development of the Deer Creek Reservoir Project. We are being told that the project currently is held up in the Senate Committee on Environment and Public Works. We are seeking your assistance at this time in getting the Committee on Enironment and Public Works to authorize this project so that we can get on with its construction. The development of this project will supply the immediate needs of numerous communities in this part of the State, including but not limited to the Town of Bethel, City of Tecumseh, Pott County Development Authority, and all of the small communities that it serves, as well as the City of Shawnee.

As you can see, the benefits to the rural community in this area are great and it is a rare occasion when a project of this type is affordable to the small communities. As you are aware, the majority of the costs of this project will be reimbursed by the participants. However, without Federal involvement the project is simply economically impossible, especially for our rural community.

Once again, your assistance on this project would sincerely be appreciated.

STATEMENT OF BUREN E. WILSON, COMMISSIONER, SHAWNEE, OKLA.

Over the last few years, the City of Shawnee has supported the Deer Creek Reservoir Project and has annually sent delegations to Washington to give testimony in support of this project. We are now told that the project is now in the Senate Committee on Environment and Public Works.

We would sincerely ask that you use your influence in getting this project authorized by the Senate Committee on Environment and Public Works. Your help in this matter would be sincerely appreciated.

STATEMENT OF ISAAC E. BRANNON, COMMISSIONER, SHAWNEE, OKLA.

During the last few years, the City of Shawnee has been working hard to get Deer Creek Reservoir constructed. While working with the Pottawatomie County Development Authority we were able to get the voters of Shawnee to pass a bond issue to raise $3,000,000 for the construction of this project. In addition, we have been trying to help Pottawatomie County Development Authority qualify its project with the Secretary of Agriculture. This project is currently held up in the Senate Committee on Environment and Public Works.

I would appreciate your help in getting this project authorized for this part of Oklahoma. Your assistance will be appreciated.

RESOLUTION

WHEREAS, Parker Reservoir is going to be very vital for the future development of the industrial and economic base of Coal, Hughes, Pushmataha, and Pontotoc Counties; and

WHEREAS, the city of Ada is involved in lawsuits now opposing its water rights from the Arbuckle Aquifer, creating an insecure situation for its water rights; and

WHEREAS, the water supply to be developed from Parker Reservoir would be an excellent source of water for industrial development and back-up water for the Ada municipality, plus nine (9) rural water districts:

NOW, THEREFORE, BE IT RESOLVED by the City Council of the city of Ada, Oklahoma that the city of Ada wishes to express its strong support for the Congress of the United States and the President to move ahead as quickly as possible to fund and build Parker Reservoir.

Dated this 7th day of April, 1986.

RESOLUTION OF MOORE, OKLA.

RESOLUTION NO. 184(86)

WHEREAS, The City of Moore, Oklahoma has experienced water shortage in the past due in part to the dropping of the water table in the Garber-Wellington Aqufier, and

WHEREAS, in the past the City of Moore, Oklahoma has drilled additional wells in the Garber-Wellington Aqufier to satisfy their current needs, and

WHEREAS, from time to time the levels of selenium are above the maximum level as established by the EPA for safe drinking water in some of the wells, and

WHEREAS, the Association of Central Oklahoma Governments has made a study of the Garber-Wellington Aquifier, and found that the recharge of the formation is less than the present demand, and

WHEREAS, the City of Moore, Oklahoma has determined that by the year 2005 that they will need as much as 15,000,000 gallons of water per day, and

WHEREAS, THE City of Moore, Oklahoma desires to look forward and make arrangements for another water supply other than the Garber-Wellington Aquifier to assure safe drinking water in adequate quantities to serve the residents of the City of Moore, Oklahoma, and

WHEREAS, a study of east central Oklahoma water has identified possible water supplies in eastern Oklahoma, and

WHEREAS, the existing surface water is not economically available in sufficient quanities for the City of Moore, Oklahoma, in central Oklahoma, and

WHEREAS, Red Ark Development Authority has established a water resources task force with representatives from the U.S. Army Corps of Engineers, Department of Interior/Bureau of Reclaimation, USDA/Soil Conservation Service, Oklahoma Water Resources Board, and Tennessee Valley Authority to investigate strategies for the full development of area water resources, and

WHEREAS, the Red Ark Development Authority through its Task Force has identified Parker Reservior as a potential water supply, and

WHEREAS, the City of Moore, Oklahoma, and Red Ark Development Authority has applied for water rights to Parker Reservior from the Oklahoma Water Resources Board, and

WHEREAS, the Oklahoma Water Resources Board and Red Ark Development Authority has indicated a willingness to be a non-federal sponser and have met with the Tulsa District Corps of Engineers to discuss cost sharing agreements for Parker Lake consistant with those allowed under Senate Bill 1567, and have submitted draft letters of assurance regarding said cost sharing agreements,

NOW THEREFORE, BE IT RESOLVED, the the City Council of the City of Moore, Oklahoma requests that Congress continue to participate through funding of the Corps of Engineers with Red Ark Development Authority, Oklahoma Water Resources Board and other potential users to continue the planning and engineering on Parker Reservior to ultimately complete construction.

ADOPTED this 7th day of April, 1986, at a regularly scheduled meeting of the City Council.

PREPARED STATEMENT OF CONGRESSMAN BUNNING OF KENTUCKY

Senator Johnston. Before we recess the hearing, the statement that Congressman Bunning has submitted will be made part of the record.

[The statement follows:]

STATEMENT OF U.S. REPRESENTATIVE JIM BUNNING FROM KENTUCKY

MR. CHAIRMAN; DISTINGUISHED MEMBERS OF THE SUBCOMMITTEE; THIS IS THE FIRST TIME I HAVE HAD THE HONOR TO APPEAR BEFORE THIS SUBCOMMITTEE WITH MY COLLEAGUES FROM KENTUCKY TO DISCUSS THE PROJECTS THAT ARE SO IMPORTANT TO OUR CONSTITUENTS. I DO APPRECIATE YOUR MAKING THIS TIME AVAILABLE TO US.

MY PREDECESSOR, GENE SNYDER, HAD A VERY HIGH REGARD FOR THE MEMBERS OF THIS SUBCOMMITTEE. I KNOW HE HAD A VERY GOOD WORKING RELATIONSHIP WITH YOU AND I HOPE TO FOLLOW IN HIS FOOTSTEPS. BY THE WAY, GENE DOES SEND HIS BEST WISHES TO YOU ALL.

MR. CHAIRMAN, THE MAJOR PROJECT CURRENTLY UNDERWAY IN THE 4TH DISTRICT OF KENTUCKY, OF COURSE, IS THE SOUTHWESTERN JEFFERSON COUNTY FLOODWALL. IT IS A SYSTEM OF EARTH LEVEES, CONCRETE FLOODWALLS PUMPING PLANTS AND RELATED ITEMS DESIGNED TO PROTECT 32 SQUARE MILES OF FLOOD PLAIN---SOME 24,100 ACRES IN JEFFERSON COUNTY, KENTUCKY. DEVELOPMENT IN THE AREA IS CURRENTLY VALUED AT OVER 1 AND 1/2 BILLION DOLLARS ($1.576 AT 1986 VALUES).

TO DATE, $48.2 MILLION DOLLARS HAS BEEN ALLOCATED. 6.5 MILLION HAS BEEN REQUESTED THIS YEAR FOR CONTINUATION OF THE CONSTRUCTION IN FISCAL 1988. THIS WILL LEAVE US ONLY 3 MILLION DOLLARS FROM FINAL COMPLETION OF THE PROJECT.

IT IS A VALUABLE PROJECT---THE ANNUAL BENEFITS ARE ESTIMATED

TO BE IN THE NEIGHBORHOOD OF $8.4 MILLION DOLLARS. THE REMAINING BENEFIT--REMAINING COST RATIO IS 16.3 TO 1.

IT IS A GOOD PROJECT AND IT'S MOVING ALONG WELL.

THERE IS ANOTHER PROJECT I WOULD LIKE TO BRING TO THE SUBCOMMITTEE'S ATTENTION. IN EASTERN JEFFERSON COUNTY THERE IS A ROAD CALLED ROUTT ROAD AND ON THAT ROAD FOR YEARS THERE WAS A BRIDGE OVER A STREAM CALLED FLOYD'S FORK. WHILE THE CORPS OF ENGINEERS WAS WORKING ON THE TAYLORSVILLE LAKE FLOOD CONTROL PROJECT, A GOOD BIT OF HEAVY CONSTRUCTION TRUCK TRAFFIC WAS DIVERTED ACROSS THAT OLD TRUSS BRIDGE AND IT JUST WASN'T DESIGNED TO CARRY THAT KIND OF LOAD. AS A RESULT THE FLOYD'S FORK BRIDGE IS NO LONGER WITH US. A COUPLE YEARS AGO, IT WAS TORN DOWN BECAUSE IT WAS UNSAFE.

MY PREDECESSOR ADDRESSED THIS PROBLEM LAST YEAR BY HAVING A PROVISION INCLUDED IN THE WATER RESOURCES BILL (H.R. 6) WHICH AUTHORIZED THE REPLACEMENT OF THE BRIDGE AT A COST OF $750,000. THIS IS TO BE A SHARED COST PROJECT, WITH THE STATE PUTTING UP HALF AND THE FEDERAL GOVERNMENT PROVIDING THE OTHER $375,000.

THE KENTUCKY DEPARTMENT OF TRANSPORTATION HAS MADE A COMMITMENT TO ANTE UP ITS SHARE AND I HOPE THIS SUBCOMMITTEE WILL SEE FIT TO PROVIDE THE OTHER $375,000, SO THIS PROJECT CAN GO FORWARD. THE CORPS HAS THE CAPABILITY AND THE STATE STANDS READY TO COOPERATE FULLY TO GET THIS BRIDGE REPLACED SO THOSE

FOLKS WHO LIVE ALONG ROUTT ROAD CAN GET ACROSS FLOYD'S FORK.

SO FAR, I'VE DISCUSSED 2 PROJECTS THAT I WOULD LIKE THE CORPS TO WORK ON. TO CHANGE THE PACE A LITTLE BIT, I'D LIKE TO MENTION SOMETHING THAT I WOULD PREFER THE CORPS NOT TO DO.

APPARENTLY, THE CHIEF OF ENGINEERS IS CONSIDERING TRANSFERRING THE ENGINEERING JURISDICTION OVER THE OLMSTED PROJECT--WHICH IS THE REPLACEMENT OF LOCKS AND DAM 52 AND 53--FROM THE LOUISVILLE DISTRICT TO THE NASHVILLE DISTRICT.

I AM CONCERNED ABOUT THIS PROPOSAL, OF COURSE, BECAUSE I DON'T WANT TO SEE THE LOUISVILLE DISTRICT OFFICE DOWNGRADED AND MY CONSTITUENTS' JOBS BEING SHIPPED TO NASHVILLE, BUT MY OPPOSITION TO THIS PROPOSAL IS ALSO BASED ON ANOTHER LESS COLLOQUIAL REASON AS WELL; THE FACT THAT THIS REORGANIZATION COULD VERY WELL DELAY THE OLMSTED PROJECT.

THE LOUISVILLE DISTRICT OFFICE HAS ALREADY COMPLETED MUCH OF THE PRELIMINARY STUDY AND DESIGN WORK ON THIS PROJECT AND I AM CONCERNED THAT IF THE JURISDICTION IS TRANSFERRED TO NASHVILLE, WE ARE GOING TO END UP STARTING OVER FROM SCRATCH AND THE REPLACEMENT OF THESE TWO OLD, INADEQUATE LOCKS AND DAMS WILL BE DELAYED FURTHER.

THESE LOCKS AND DAMS, LOCATED AS THEY ARE RIGHT BELOW THE CONFLUENCE OF THE CUMBERLAND, THE TENNESSEE AND THE OHIO RIVERS, ARE A BIG BOTTLENECK FOR BARGE TRAFFIC ON THE OHIO. THEY ARE OLD

AND NEED REPLACING. THEY ARE NOT SAFE. AND, I WOULD HATE TO SEE THIS REPLACEMENT PROJECT DELAYED BECAUSE OF AN ORGANIZATIONAL RESTRUCTURING THAT IS NOT NEEDED. I URGE THE MEMBERS OF THE SUBCOMMITTEE TO LOOK INTO THIS MATTER VERY CAREFULLY.

IN CLOSING, I WOULD LIKE TO MENTION BRIEFLY THE FALLS OF OHIO NATIONAL WILDLIFE CONSERVATION AREA.

LAST YEAR, IN THE CONTINUING RESOLUTION, YOU WERE KIND ENOUGH TO PROVIDE THE $900,000 IN ADDITIONAL FUNDS TO COMPLETE THE LAND ACQUISITION AND ASSOCIATED COSTS OF THIS PROJECT. HOWEVER, LATE LAST YEAR, AFTER PASSAGE OF H.R. 6, THE OFFICE OF MANAGEMENT AND BUDGET AND THE DEPARTMENT OF THE ARMY DETERMINED THAT THE COST SHARING REQUIREMENTS OF THE WATER RESOURCES BILL, SECTION 906, WOULD BE APPLIED RETROACTIVELY TO THIS PROJECT.

SINCE THEN, THE DEPARTMENT HAS RECONSIDERED ITS POSITION AND DID RECENTLY ANNOUNCE THAT IT WOULD BE RELEASING $680,000, THE AMOUNT NEEDED TO COMPLETE LAND ACQUISITION. HOWEVER, THE ARMY STILL INSISTS THAT THE FUNDS NEEDED FOR THE PARKING LOT, OBSERVATION PLATFORM AND TRAIL CONSTRUCTION ARE SUBJECT TO A 50% LOCAL COST SHARE.

I DO COMMEND THE DEPARTMENT OF THE ARMY FOR RECONSIDERING THEIR INITIAL POSITION AND FOR RELEASING THE ACQUISITION FUNDS.

HOWEVER, I DO WANT TO GO ON RECORD AS DISAGREEING VERY STRONGLY WITH THEIR ASSERTION THAT COST-SHARING REQUIREMENTS SHOULD APPLY TO THE REMAINING PORTIONS OF THE PROJECT.

IN THE FIRST PLACE, IT IS FAIRLY CLEAR THAT, BY ESTABLISHING A NATIONAL WILDLIFE CONSERVATION AREA, CONGRESS INTENDED THAT THE BENEFITS BE VIEWED AS BEING NATIONAL. THERE IS ALSO A STRONG ARGUMENT FOR THE POINT THAT A WILDLIFE CONSERVATION AREA IS THE SAME AS A NATIONAL WILDLIFE REFUGE EXCEPT IN NAME AND FOR THE FACT THAT IT IS ADMINISTERED BY THE CORPS OF ENGINEERS RATHER THAN THE FISH AND WILDLIFE SERVICE. IN EITHER CASE, IT IS DIFFICULT FOR ME TO UNDERSTAND HOW SECTION 906 COULD APPLY.

I REALIZE THERE IS NOT MUCH HOPE OF TURNING THE CORPS OR OMB AROUND ON THIS POINT BUT I DO BELIEVE THEY ARE WRONG.

AGAIN, MR. CHAIRMAN, I THANK YOU FOR GIVING ME THIS OPPORTUNITY TO APPEAR BEFORE YOU. I REALLY DO LOOK FORWARD TO WORKING WITH YOU.

SUBCOMMITTEE RECESS

Senator JOHNSTON. Thank you very much for coming. We will very carefully consider all the written statements and testimony today. Thank you very much.

We now stand in recess until 10 a.m. tomorrow.

[Whereupon, at 4:30 p.m. Monday, March 30, the subcommittee was recessed to reconvene at 10 a.m. Tuesday, March 31.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1988

TUESDAY, MARCH 31, 1987

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m., in room SD-192, Hon. Dennis DeConcini presiding.

Present: Senator DeConcini and Sasser; also present: Senator Exon.

NONDEPARTMENTAL WITNESSES

OPENING INTRODUCTIONS

Senator DECONCINI. The Appropriations Subcommittee on Energy and Water Development will come to order. The meeting is being held today by the subcommittee and I want to thank the chairman, Senator Johnston, for permitting me to chair this hearing.

We are going to begin today with Senator McCain, who is new in the Senate, but quite old and seasoned in efforts of the CAP.

Then, Senator McCain we will ask you to join us up here. I want to pay particular thanks to former Congressmen John Rhodes and Eldon Rudd, who are with us here in the audience and who have worked so many, many years on this project. I told John Rhodes that it just doesn't seem the same, not to diminish at all from Jay Rhodes' fine representation of that district, not having him as the leader of the Central Arizona Project.

We welcome you here, Congressman Rhodes and Congressman Rudd, as we do Congressman Jay Rhodes and other members of the delegation that may come in during the day.

Over the years, Arizona has had a history of quality leadership from the Governor's offices and their staffs and water users and interested citizens—to promote, insure, and sustain development in an environmentally acceptable way for the state of Arizona.

Senator McCain, this is your first appearance before this subcommittee and we are honored to have you here. I know that your relationship with the committee will be long and productive.

CENTRAL ARIZONA PROJECT

STATEMENT OF HON. DENNIS DeCONCINI, U.S. SENATOR FROM ARIZONA

Before we begin, I would like to take just a few minutes for an opening statement for myself, one of the prerogatives of chairing this committee.

The Central Arizona Project is over 50-percent complete. In fiscal year 1988, substantial progress will be made on the completion of the Tucson Aqueduct, phase B, which is and should continue to be our top priority. At current funding levels, initial water deliveries will be made to the Tucson metropolitan area sometime in 1991.

In fiscal year 1988, plan 6 will be over 17-percent completed and important preconstruction activities will continue, including urgent safety of dams work on both Roosevelt and Stewart Mountain Dams in the Phoenix area. Arizonans have taken an unprecedented step in providing significant upfront cost sharing to ensure an expedited completion of the CAP. Some of those nonfederal funds have already been committed to the special escrow account and those moneys are now flowing into the current construction work.

I think that a great deal of credit goes to the communities, the state government, and the water users in Arizona for putting together a real effective cost-sharing plan, and putting their money upfront.

We have had a long journey, ladies and gentlemen, but the leadership taken by our state over the years has started to pay off and is paying a rewarding dividend. The Department of the Interior has been especially generous with its request of $268.7 million for the CAP in fiscal year 1988. I want to take this opportunity to compliment once again Secretary of the Interior Donald P. Hodel, who has really proven to be a friend of Arizona, and we all owe him a debt of gratitude for his leadership.

I also want to pay a compliment to former Governor Bruce Babbitt, who had the foresight to put Arizona out front on cost sharing, ground water management, and ground water quality issues. Governor Babbitt pulled all of us together on controversial water financing and water management issues. He took some gutsy positions that helped us overcome some long-standing hurdles.

Hurdles still lie ahead of us. Just as water knows no boundaries, neither do water problems. With continued strong leadership and foresight from the Governor's office—and Governor Mecham has demonstrated that capability—I am confident Arizona can continue to overcome some of the more pressing problems before us.

Historically, the role of the Governor's office in the development of the CAP and other water matters has been a critical one to Arizona's future. It is clear to me that we need continued leadership and that we will have it from Governor Mecham.

In conclusion, I want to thank the distinguished chairman of this subcommittee, Senator Bennett Johnston, and the ranking minority member, Mark Hatfield. Both have been sympathetic and supportive over the years on behalf of the Central Arizona Project. I have full confidence that they will continue their support of the CAP and provide the funding level necessary to allow the Department of the Interior to comply with the commitments made to Arizona water interests in the Central Arizona Project cost-sharing agreement.

I also want to extend my thanks to the staff of this subcommittee for their consideration over the years and their continued effort to see that this project is completed.

Senator McCain, we are prepared to hear your statement.

STATEMENT OF HON. JOHN McCAIN, U.S. SENATOR FROM ARIZONA

Senator McCAIN. Thank you, Mr. Chairman, I will attempt to be very brief. Mr. Chairman, I have a written statement that I would like to request unanimous consent be made part of the record.

Senator DECONCINI. Without objection, it will so appear.

Senator McCAIN. Thank you, Mr. Chairman.

I would first like to, personally, on behalf of many Arizonans, thank you for your dedication, zeal, and enthusiasm that you have displayed now, I believe, for over 10 years on behalf of the Central Arizona Project. I would suggest that a case could be made that we, perhaps, might not be as far along as we are today if it had not been for your dedicated efforts, not only as a Member of the U.S. Senate, but as a key member of the Appropriations Committee.

Senator DECONCINI. Thank you, Senator McCain.

Senator McCAIN. I would also like, Mr. Chairman, if possible, with your permission, to include as part of the record, a statement by Mr. Luther Davis, president of SAWARA. As you know, it is a very vital organization in the southern part of our state, who are committed to the early completion of the Tucson Aqueduct.

Senator DECONCINI. Without objection, it will appear in the record.

Senator McCAIN. Mr. Chairman, as I said, I will attempt to be brief. This is the fifth year I have had the opportunity of testifying in support of the Central Arizona Project. During this time, as you just mentioned, we have seen tremendous progress because of the support of the administration and this committee for adequate funding, including the enormous support that our colleague, Congressman Udall, as well as his predecessors and others have given to this project.

The CAP Aqueduct is now within 100 miles of the city of Tucson, an enormous success story. I must mention again, Mr. Chairman, that our No. 1 priority remains the completion of the aqueduct to Tucson, a commitment that all of us made many years ago. I am very pleased that the delegation has continued to support that in a bipartisan and unanimous fashion.

The current administration's request for $275.8 million, I think, is clearly indicative of the administration's commitment to the project and the cost-sharing agreement signed between the federal government and Arizona in 1986 has already become a model for agreements between the federal government and other states.

I think that it is also worthy of mention, Mr. Chairman, the administration's budget philosophy that emphasizes the completion of those projects that are already well along in construction. If we had continued along previous policies of other administrations, both Republican and Democratic, I think that it would have been years and years before any project would have been completed. I believe the reordering of priorities in the short term will ensure water delivery and repayment not only as far as Arizona is concerned, but as far as other states and their projects are concerned as well.

Funding included for the ongoing work on safety of dams, repairs to Roosevelt and Stewart Mountain Dams, in addition to meeting the federal obligation to deliver water to the Ak-Chin Reservation by 1988, San Xavier, and Schuk Toak District of the Tohono O'odham Reservations by 1992, are important parts of the administration's request.

I would like to thank you again and the members of the committee for their support in the past. I am confident that we will receive that same support in the future to see a dream that, perhaps, many Arizonans thought would never come true, indeed, become a reality.

[The statements follow:]

STATEMENT OF SENATOR MCCAIN

Mr. Chairman, members of this subcommittee, I am honored to be present today to express my support for full funding for the Central Arizona Project.

When I first testified as a freshman Congressman in support of the fiscal year 1984 CAP appropriations we had experienced a number of years of delays, slippage and underfunding. However, since that time, just 4 years ago, I have been personally gratified by the congressional support for getting the CAP back on schedule primarily through this committee's support for funding levels consistent with the stated work capabilities of the Bureau of Reclamation.

It is because of this ongoing support that we have seen the actual delivery of Colorado River water to the Phoenix metropolitan area. The major portion of this year's funding request will go toward work on the Tucson Aqueduct, further insuring the scheduled water delivery to Tucson by 1991.

In addition to the actual construction monies for the aqueduct and non-Indian distribution systems, the fiscal year 1988 appropriations request meets the federal obligation to deliver water to the Ak-Chin Reservation by 1988 and to the San Xavier and Schuk Toak Districts of the Tohono O'Odham (Papago) Reservations by 1992. Another critical issue being addressed by this funding level is urgently needed safety repairs on two dams within 40 miles of downtown Phoenix. The Wall Street Journal on March 19, 1987, reported that Roosevelt Dam on the Salt River, which has been identified among the 52 reclamation dams needing structural repairs, if overtopped by the probable maximum flood, would crumble, triggering a "domino effect." "The flood would heavily damage two down-river dams, knock out a third, and surge toward Phoenix." If this occurred, an estimated 250,000 people would be flooded; and property damage would exceed $9.5 billion. Failure to complete needed repairs to Roosevelt and Stewart Mountain is little more than courting fiscal disaster.

The $275.8 million request before us today clearly illustrates this administration's commitment to the Central Arizona Project as well as its newly devised budget philosophy that emphasizes the completion of those reclamation projects which are already well along in construction. This reordering of priorities in the short term will ensure water delivery and repayment on several major projects as rapidly as possible.

The economic climate of today has necessitated a major shift from full federal support for Western water projects to cost sharing and financial contribution by local governments. This fact further demonstrates the underlying soundness of short-term increased funding for those projects nearing completion. The historic agreement reached in 1986 between the federal government and 11 project beneficiaries in Arizona to bring $348 million in local cost sharing to help assure the speedy completion of the CAP aqueduct and plan 6, clearly demonstrates Arizona's recognition and acceptance of this new budget reality.

Mr. Chairman, I do want to mention that we in Arizona are acutely aware of the budget deficit and the need to closely scrutinize all expenditures. We are also aware of the fact that with the Bureau of Reclamation's reordering of priorities, some projects have been adversely impacted. However, those targeted investments which are made today will, in fact, be repaid tomorrow. Since the turn of the century, reclamation has returned 85 percent of its costs to the Federal Treasury.

Mr. Chairman, the CAP aqueduct is now just 100 miles away from its completion to Tucson. We are over the two-thirds mark of seeing this once impossible dream become a reality. I know I speak for all Arizonans when I express my very real gratitude for the progress that you have made possible. Your foresight has enabled the Central Arizona Project, in its entirety, to move forward. The end is now in sight. We will soon see the return on the federal investment in the form of income from farming, industry and commercial enterprise. The completion of the CAP in its entirety is not only in the best interests of all Arizonans but also is an excellent example of a fiscally sound and responsible investment in our nation's future.

Thank you.

STATEMENT OF LUTHER DAVIS, PRESIDENT, SOUTHERN ARIZONA WATER RESOURCES ASSOCIATION

Mr. Chairman and members of the committee, it is an honor to be here to express to you my appreciation on behalf of Southern Arizona Water Resources Association and the City of Tucson in support of the Central Arizona Project through these many years. Southern Arizona Water Resources Association is a non-profit, public participation organization working for the assurance of Tucson's future water supplies.

I am asking you to stay with us a little longer to complete this project. I would like to review the major steps of this project to the current status, and indicate the tremendous impact its completion will have on the community.

After authorization in 1968, the funding program began slowly. But since 1977 it has been building to maximum level to enable the Bureau of Reclamation to deliver water to the major urban areas in Arizona. Water is being delivered to Phoenix and the major cities around Phoenix as well as to several agricultural irrigation districts, but Arizona cannot take its full Colorado River allotment until the aqueduct to Tucson is completed in 1991.

Tucson is a city waiting for delivery of this surface supply of water. Tucson is the largest city in the world completely dependent on pumped groundwater. Our very existence depends on favorable consideration by the Congress in funding the completion of the aqueduct to Tucson, now the number one priority of the CAP project. We also support the other unfinished features of CAP.

Tucson, realizing the nature of its precious water supplies, has been employing one of the most aggressive water education and water conservation programs in the United States. We have a full understanding of how we must work with our water supplies and demands, and the major part that Colorado River water will play in our ability to do water management.

Tucson is the proud hometown of The Honorable Morris K. Udall, Senator Dennis DeConcini and one of the newer members of the house Jim Kolbe. We remain in your debt and look forward to your generosity once again in full funding of the Central Arizona Project in 1988.

INTRODUCTION OF GOVERNOR MECHAM OF ARIZONA

Senator McCain. I would also, Mr. Chairman, like to take this opportunity to introduce Governor Mecham to you and the committee. I believe that Governor Mecham has shown in the past a commitment to our state. He fully appreciates the crucial importance of water in the orderly growth of our state. I am certainly pleased to have him here today to testify on behalf of the Central Arizona Project, and give us his perspective.

At this time, I would like to ask Governor Mecham if he would join us.

Senator DeConcini. Governor Mecham, we welcome you here.

Senator McCain, if you would like to join us here. I am going to take the exceptional privileges of the chairman of this committee and ask both Congressman Rhodes and Congressman Rudd if they would like to come up and sit with us here on the right side of this dais, as well as anyone else here from the delegation. Without these gentlemen, we would not be here today requesting $275 million.

Please sit down, gentlemen.

Governor Mecham, we welcome you here. We know that you have a lengthy statement, and because you are the Governor, you can speak just as long as you like on the Central Arizona Project with this chairman here. Please proceed, Governor.

STATEMENT OF GOV. EVAN MECHAM OF ARIZONA

ACCOMPANIED BY:
- ALAN KLEINMAN, DIRECTOR, ARIZONA DEPARTMENT OF WATER RESOURCES
- LARRY LINSER, DEPUTY DIRECTOR, ARIZONA DEPARTMENT OF WATER RESOURCES

Governor Mecham. Thank you. You all look very much in place up there. I want to echo the thanks that Senator McCain has already expressed to so many who have been involved in this.

Mr. Chairman and members of the committee, I appreciate this opportunity to appear before you to discuss appropriations for projects which affect the state of Arizona. My comments today will be brief. I have copies of more detailed testimony to submit for your consideration.

Senator DeConcini. It will appear in the record, Governor.

Governor Mecham. Let me begin by declaring my strong support for completion of the Central Arizona Project. I may be new to the office of Governor, but I am not a new supporter of CAP. Completion of the project is vital to Arizona's water management program and to the state's future economy.

I am extremely pleased with the progress that the Bureau of Reclamation has made in constructing CAP aqueduct facilities. The Granite Reef and the Salt/Gila Aqueducts are complete and the Tucson Aqueduct is under construction, the water being delivered today to several cities and irrigation districts in Maricopa and Pinal Counties.

Delivery of CAP water to Tucson is scheduled, as has been mentioned before, for 1991, with the aqueduct completion expected in 1992.

I fervently hope that you can appropriate sufficient funds next year and in future years to fulfill our dream of completion of all CAP features on schedule.

Arizona is carrying its share of the load. To compliment the project's purpose, we enacted a comprehensive ground water management code designed to assure a balance between water use and supply by the year 2025. As Governor, I intend to support the continued enforcement of this law. However, for this far-reaching act to achieve its far intended goal, we must complete the CAP in a timely manner.

LOCAL COST-SHARING EFFORTS

In addition to the ground water management program, Arizona interests are making additional efforts to assure the timely completion of the Central Arizona Project. One year ago, several Arizona interests entered into a cost-sharing upfront funding agreement with the Secretary of Interior.

This agreement provides that nonfederal interests will advance an estimated $371 million toward the construction cost of plan 6 features of the project. This was unique in that it significantly increased the share of project cost to be borne by local entities.

Already, the Arizona parties to the agreement have contributed over $26 million toward the project construction. Additionally, individual irrigation districts have issued over $60 million of general obligation bonds for upfront financing and cost sharing. Revenues from CAP water delivered to these districts must be available on schedule to meet bond repayment requirements.

Other concerns which I address in my testimony relate to the need for continued efforts in safety of dams and salinity control on the Colorado River, and in research for potential weather modifications on the Salt and Verde River systems.

I urge your continued support of projects in Arizona, particularly the Central Arizona Project, so that we can continue with the schedule set forth in the plan 6 upfront funding agreement and begin delivery of Colorado River water to Tucson.

I am also submitting testimony for the city of Phoenix, the city of Tucson, New Magma, Central Arizona Maricopa-Stanfield Irrigation Districts, Irrigation and Electrical District Association of Arizona, and the Metropolitan Water District of Southern California.

Mr. Chairman, I thank this committee for the opportunity to present my concerns before you today and for your continuing strong support of water resources development in Arizona. Thank you.

[The statements follow:]

STATEMENT OF GOV. EVAN MECHAM OF ARIZONA

Mr. Chairman and members of the Committee. I appreciate this opportunity to express support of appropriations for the various water related projects which affect the State of Arizona.

By far, the most significant Federal effort affecting our State is the Central Arizona Project. Completion of this project on schedule is essential. The project is an integral element of Arizona's water management program and is vital to our success.

Arizona appreciates the past levels of appropriations from Congress and much progress has been made in constructing Central Arizona Project features. The Granite Reef and Salt/Gila aqueducts are operational. Phase A of the Tucson aqueduct is complete except for installation of pumping plants, and Phase B is under construction. Arizona's number 1 funding priority continues to be the completion of the main stem aqueduct to Tucson with delivery scheduled for 1991.

To date, about 160,000 acre-feet of Colorado River water has been diverted to our farms and cities. Water is now being supplied to the cities of Glendale, Mesa, Phoenix, Scottsdale, and the Chapparal City Water Company. Agricultural water is being delivered to Harquahala Valley, New Magma, Tonopah and Central Arizona irrigation districts and to the Maricopa County water districts. By July we expect to deliver water to the Maricopa/Stanfield and Queen Creek irrigation districts and the Roosevelt Water Conservation District.

Agricultural distribution systems, which are necessary to distribute supplies to agricultural users, are an important part of the Central Arizona Project. Agricultural contractors for CAP water have completed construction of over 500 miles of distribtion system canals, and another 500 miles are either under construction or on the drawing boards.

In order to allow Colorado River water to be used by the cities, new treatment plants have been constructed and are on line for the cities of Glendale, Mesa, Phoenix and Scottsdale. These cities have already expended $143 million for these new plants and related distribution systems. Additionally, plans for new plants are progressing in Tucson and by the Arizona Water Company for service to the White Tanks area and the Towns of Casa Grande and Coolidge.

The Federal government has a commitment to deliver water to the Ak-Chin Indian Reservation by 1988 and to the San Xavier and Schuk Toak districts of the Tohono O'Odham (formerly Papago) Reservations by 1992. Delays beyond these dates impose serious financial penalties to the Federal government. The current schedule will deliver water to the Ak-Chins in about 3 months, one-half year ahead of the deadline. Looking further ahead, the San Xavier and Schuk Toak districts should be receiving water by 1991 which is within the contract terms.

The State of Arizona has lived up to its commitments to assure that project water would be put to use commensurate with wise water conservation practices and consistent with the intent of the Colorado River Basin Project Act. In 1980 the State passed a comprehensive Groundwater Management Law. This new groundwater code is far reaching and is designed to assure a balance between water use and supply by the year 2025. Let me assure you that I, as Governor of the State, will support the continued implementation of the groundwater code. However, in order for us to achieve the goals set forth in the code it is essential that the Central Arizona Project is completed in a timely manner.

I cannot overemphasize this point. Using the Tucson Active Management Area as just one example, under 1980 levels of development the total demand for water in the area was 471,000 acre feet. To satisfy this demand, 249,000 acre feet had to be mined (overdrafted) from the groundwater basin. Future conservation efforts and reductions in agricultural uses will help reduce, but will not overcome, this unacceptable situation. Central Arizona Project water must be delivered to Tucson if we are to achieve a balance between supplies and uses. The sooner the better.

In addition to Arizona's commitment to groundwater management, last year several Arizona interests entered into a historic cost-sharing/up-front funding agreement with the Secretary of the Interior. This agreement provides that Arizona interests will advance an estimated $371 million towards the construction costs of Plan 6 features of the project. This is a significant commitment by the Arizona entities, but one that we feel is worthwhile and necessary to assure timely completion of the Central Arizona Project. Thus far all of the conditions of the agreement have been met. The Central Arizona Water Conservation District, the Flood Control District of Maricopa County and six Salt River valley cities have collectively placed $21,450,000 in an escrow account. $6,100,000 has been withdrawn by the Bureau of Reclamation for construction of Plan 6 features. The Federal government has also fulfilled its obligation and appropriated sufficient funds to meet a schedule to allow for completion of the project by 1997.

Additionally for non-Indian distribution systems, the various irrigation districts have assumed substantial risk by raising over $60 million of general obligation bonds in order to provide up-front financing and cost-sharing. It is absolutely essential that revenues from full delivery of CAP water is available on schedule to these districts so that they can meet principal and interest payments on their bonds. Some of which start in June 1988.

Completion of CAP is also necessary to realize flood control on the Salt River through the Phoenix metropolitan area. Today this population center is bisected by a major river system which has not one acre-foot of storage devoted to flood control in the existing upstream reservoirs. Plan 6 reservoirs will contain an allocation of flood control space to alleviate this situation. The importance of this benefit is demonstrated by the Flood Control District of Maricopa County's commitment to cost share 20% of the flood control allocation, even though 100% of the flood control features of CAP are authorized to be paid from Federal funds.

In summary, I urge your continued support of funding for the Central Arizona Project to assure that the provisions set forth in the Plan 6 Up-Front Funding Agreement are satisfied and the aqueduct is completed on schedule to Tucson so we can begin delivering our full entitlement of Colorado River water to Central Arizona.

An integral part of the Plan 6 features of the Central Arizona Project is the resolution of safety of dams problems that exist on the Salt and Verde Rivers. I'm sure you can understand our concerns. Existing dams upstream of the Phoenix metropolitan area have been identified as having safety problems. The administration budget contains a total of $29.7 million to continue the final design and initiate construction of Plan 6 facilities on the Salt and Verde Rivers. Approximately one-half of this budgeted amount ($15.3 million) is for safety of dams purposes. Local contribution of $5.6 million will be used in this effort, leaving a need for $24.1 million from Federal appropriations. I support an appropriation of this amount.

Included in the budgeted amounts for Plan 6 facilities is $9 million dollars for the construction of the future bridge to be located upstream of Roosevelt Dam. Approval of these funds now will avoid a temporary river crossing during modification of Roosevelt Dam and will remove the safety and maintenance problems caused by the existing state highway atop the dam. The new bridge will leave a permanent structure to serve the transportation needs for future decades. I urge your approval of the requested amount for Plan 6 facilities.

Mr. Chairman, let me now turn to projects located outside of Arizona but which have a major impact on the State's water supplies. I am referring to the Colorado River water quality improvement program. The Colorado River represents about 62% of the long-term dependable supply of the State of Arizona. We are therefore keenly interested in the quality of this supply. We realize that the current water supply situation on the Colorado River has temporarily improved quality of the river. We must not let this condition mislead us. Construction and planning of salinity control facilities, must advance at a reasonable level. It is essential that the Federal government carry out its commitment to preserve the salinity standards established for the river. To assure this, appropriations to the Bureau of Reclamation must be sufficient to allow the program to continue on schedule.

One last issue I want to mention. This past winter the Bureau of Reclamation carried out a program to investigate the potential for weather modification on the Salt and Verde River system. We are optimistic that we can augment our limited supplies through a long-term program of cloudseeding. Cost-sharing arrangements for both the short-term and long-term programs are currently being discussed. I encourage you to appropriate sufficient funds to the Bureau of Reclamation's Atmospheric Resources Research Budget to support this effort.

I thank the Committee for its continuing support for water resources developmnt in Arizona.

This statement has been concurred in by all the major water entities in our State.

STATEMENT OF NORMAN PRETZER, PRESIDENT, BOARD OF DIRECTORS, CENTRAL ARIZONA IRRIGATION AND DRAINAGE DISTRICT

Mr. Chairman and Members of the Subcommittee:

My name is Norman Pretzer. I am President of the Board of Directors of the Central Arizona Irrigation and Drainage District which comprises approximately 87,000 acres of irrigated land in south-central Pinal County, Arizona. On behalf of the Board of Directors of the District, I wish to thank you for the opportunity to present this statement and to express our full support of the Governor's testimony which has been presented to you.

I am pleased to report to you that, as a result of the support of your Subcommittee and the Congress in meeting the schedule of funding for the Central Arizona Project (CAP) and its irrigation distribution systems, our District was able to begin delivery of CAP water to lands in the northern portion of the District earlier this month, about four months ahead of schedule. This initial delivery of water to an area comprising about 17,000 acres is of significant benefit to our farmers and to the District.

Construction was recently started on the District's Central Main Canal, a 17-mile long facility, which will convey water to four distribution lateral units serving some 52,000 acres of land. These units are scheduled to be under construction during 1987 and completed during 1988. The distribution lateral units within the southern portion of the District, which will serve the balance of the District lands, are scheduled for completion during 1989.

In 1984 the District issued $22.7 million in general obligation bonds to fund its 20 percent share of the District's distribution system Project, estimated to cost $83.6 million. The District's "up-front" cash contribution expenditures for legal, administration and engineering costs, relative to acquisition of rights-of-way, design and construction management, total over $4.3 million through March 1987.

The financial investment by the District and its landowners is much greater than the $22.7 million in District bonds. Substantial costs are being and will continue to be incurred for on-farm improvements, such as concrete-lined irrigation ditches and laser controlled land levelling, in order to achieve water conservation.

It is crucial that construction of the District's distribution system Project remain on schedule to avoid financial problems which our landowners and the District would face if the District had to begin repayment of the full bonded indebtedness before the system is completed and revenues are received from water deliveries to all District lands.

The District would like to take this opportunity to acknowledge the excellent cooperation we have received from the Bureau of Reclamation at all levels and in particular from the Regional Director in Boulder City, Nevada, and from Reclamation officials in the Arizona Projects Office in Phoenix.

Again, we thank the Subcommittee for its support to the Central Arizona Project. With continued timely appropriations by Congress, supplemented by our bond money, we are confident that our distribution system can be completed on schedule.

STATEMENT OF JOHN E. SMITH, PRESIDENT, BOARD OF DIRECTORS, MARICOPA-STANFIELD IRRIGATION AND DRAINAGE DISTRICT

Mr. Chairman and Members of the Subcommittee:

My name is John E. Smith. I am President of the Board of Directors of the Maricopa-Stanfield Irrigation & Drainage District which comprises approximately 88,000 acres of irrigated land in northwestern Pinal County, Arizona. On behalf of the Board of Directors of the District, I wish to thank you for the opportunity to present this statement and to express our full support of the Governor's testimony which has been presented to you.

I am pleased to report to you that, as a result of the support of your Subcommittee and the Congress in meeting the schedule of funding for the Central Arizona Project (CAP) and its irrigation distribution systems, construction of the first 25-mile section of the District's main conveyance facility, Santa Rosa Canal - Division A, has been completed and is now being filled with CAP water. The care, operation and maintenance of this facility were transferred from the United States to the District. The remaining 31-mile section of the Santa Rosa Canal (Division B) and the first two units of the District's distribution laterals are scheduled to be completed and ready for initial delivery of CAP water to about 25,000 acres of District lands within the next two months.

The Santa Rosa Canal also provides for delivery of CAP water to lands in the northerly portion of the Central Arizona Irrigation and Drainage District, which began this month, as well as to lands of the Ak-Chin and Papago Chui Chu Indian communities.

I am also pleased to report that construction recently began on the District's East Main Canal, our last major conveyance facility, which will convey water to distribution laterals serving approximately 40,000 acres. These laterals and the remaining laterals of the District's distribution system are scheduled to be bid and under construction during 1987.

In 1984 the District issued $26 million in general obligation bonds to fund its 20 percent share of the District's distribution system Project, estimated to cost $97.5 million. The District's "up-front" cash contribution expenditures for legal, administration and engineering costs, relative to acquisition of rights-of-way, design and construction management, totals over $9 million through March 1987.

The financial investment by the District and its landowners is much greater than the $26 million in District bonds. Substantial costs are being and will continue to be incurred for on-farm improvements, such as concrete-lined irrigation ditches and laser controlled land levelling, in order to achieve water conservation.

It is crucial that construction of the District's distribution system Project remain on schedule to avoid financial problems which our landowners and the District would face if the District had to begin repayment of the full bonded indebtedness before the system is completed and revenues are received from water deliveries to all District lands.

The District would like to take this opportunity to acknowledge the excellent cooperation we have received from the Bureau of Reclamation at all levels and in particular from the Regional Director in Boulder City, Nevada, and from Reclamation officials in the Arizona Projects Office in Phoenix.

Again, we thank the Subcommittee for its support to the Central Arizona Project. With continued timely appropriations by Congress, supplemented by our bond money, we are confident that our distribution system can be completed on schedule.

STATEMENT OF LEWIS C. MURPHY, MAYOR, TUCSON, ARIZ.

Chairman Johnston, Members of the Committee:

On behalf of the people of Tucson, I want to express our thanks for the funding support your Committee has given over the years to the Central Arizona Project, and to ask your help in achieving the timely completion of the Project.

The City of Tucson is one of the largest metropolitan areas in the United States wholly dependent upon groundwater for its continued existence. Although the citizens of Tucson have, through voluntary conservation programs, reduced their daily per capita water demand from 205 gallons in 1974 to today's average of about 155 gallons, current demand for water exceeds renewable supplies by a ratio of more than two and one-half to one.

Arizona adopted in 1980 a groundwater code which established a long range program for stabilizing underground water supplies. The Code designates four geographic units as Active Management Areas (AMA). The Tucson Active Management Area encompasses the Upper Santa Cruz Valley Basin and the Avra/Altar Valley Basin - current sources of the City's water and the basins from which the mines, farms and Papago Indian Tribes in the Tucson area derive their water supplies. These basins are now subjected to serious annual overdrafts. The goal of the Tucson Active Management Area, under the 1980 code, is safe yield, that is, a balance between recharge and withdrawals by January 1, 2025.

The crucial element for achieving this balance is the delivery of Colorado River water to Southern Arizona through the Tucson Aqueduct. Completion of the Aqueduct is now scheduled for 1992, with first water deliveries to Tucson in 1991.

From its commencement, the Bureau has moved the Project along with exceptional efficiency. Major construction is scheduled in fiscal 1988 for Phase B of the Tucson Aqueduct in order to complete the Aqueduct on schedule.

Mr. Chairman, the State of Arizona is unified in its support for completion of the main CAP Aqueduct down to its terminus in Southern Arizona as the first priority for the expenditure of CAP funds. Governor Mecham, the Central Arizona Water Conservation District, and the major water users in the state all endorse this position.

The Tucson Aqueduct will deliver needed municipal and industrial water to the more than half a million people of the Greater Tucson area. These users will begin repayment of the capital costs of the Project as soon as the Aqueduct is completed.

The City of Tucson enthusiastically supports the funding of all elements of Plan 6, consistent with the historic cost-sharing Agreement between the United States and eleven Arizona parties.

We respectfully urge this Committee to continue the practice of making appropriations commensurate with the Bureau's full work capability.

STATEMENT OF JOHN R. LASSEN, PRESIDENT, SALT RIVER PROJECT

I am John Lassen, President of the Salt River Project, and I appreciate this opportunity to submit our statement to the Committee.

The Salt River Project was authorized in 1903 and is comprised of the Salt River Valley Water Users Association and the Salt River Project Agricultural Improvement District. The District, a political subdivision of the State provides electricity to about 490,000 residential, commercial, industrial and agricultural power users in Maricopa County and portions of Gila and Pinal counties.

The Association, an Arizona corporation, is responsible for the administration of the water rights and water supply of the shareholders in the Project's 250,000 acre service area. Collectively, the District and the Association are known as the Salt River Project.

The Project operates and maintains a system of six U. S. Bureau of Reclamation dams on the Salt and Verde rivers above the Metropolitan Phoenix area, and some 1,300 miles of canals which provide the principle water supply for the eight central Arizona cities and towns of Chandler, Gilbert, Glendale, Mesa, Peoria, Phoenix, Scottsdale, and Tempe.

The purpose of this statement is to express our appreciation to the Committee and the Congress for recognizing and funding the U.S. Bureau of Reclamation Safety of Dams program.

While the Committee is well aware of the cost and consequences of the Teton Dam failure in Idaho in 1976 and the collapse of the

Kelly Barnes Dam in Georgia a year later, in Arizona the Safety of Dams issue was put into sharp relief in Arizona in February 1980. At that time the Theodore Roosevelt Dam, the first of four dams on the Salt River and located some 80 miles east of Phoenix, was nearly full and filling at the rate of about one foot per hour from storms that had produced record rain and runoff.

Both the Bureau and the Project were concerned that if the reservoir continued to fill, the lake would submerge both access bridges to the dam and wash them into the spillway gates. Overtopping at the Roosevelt Dam was a real possibility seven years ago last month. And, it was likely that a cascading force of water would move down the river, through the remaining reservoirs and destroy the three downstream dams.

At Stewart Mountain Dam, located some 40 miles east of Phoenix, the situation was even more alarming. Significant scouring of thrust blocks which hold the thin arch of the dam in place had occurred, already, and the single spillway was not performing according to design specifications.

The situation on the Salt was so serious that the Governor issued a public warning to people living in proximity to the Salt River to prepare to evacuate their homes. Fortunately, the storms subsided and life and lifestyles eventually returned to normal. But the Corps of Engineers estimated that the 1980 flood caused more than $50 million in damage.

Mr. Chairman, I am pleased to report that the U. S. Bureau of Reclamation has developed a comprehensive plan for dealing not only with the safety of dams, but the flooding problems on the Salt and Verde rivers.

This plan, of course, is Plan 6. It will fulfill the water conservation and flood control functions of the Central Arizona Project and solve safety of dams concerns in a comprehensive and cost efficient fashion.

Among other things, Plan 6 provides the capability to control water releases on the Salt and Verde rivers during periods of heavy runoff, reducing the 200-year flood through the Phoenix area from about 290,000 cfs to 90,000 cfs and the 100-year flood to 55,000 cfs.

Plan 6 proposes increasing the height of Roosevelt Dam by 69 feet, expanding the spillway capacity and strengthening its foundation. Also involved would be the construction of an auxiliary spillway at Stewart Mountain Dam and foundation modifications there and at Horse Mesa and Mormon Flat dams on the Salt River. Plan 6 also includes the construction of Cliff Dam on the Verde River to solve safety concerns at Horseshoe and Bartlett dams and water supply problems for the cities and some of Arizona's Indian communities.

Plan 6 was the consensus of a seven-year planning effort by Arizona water interests. This Committee is aware that in 1986 the State of Arizona, on behalf of those interests, demonstrated its commitment to Plan 6 by signing a costsharing agreement with the United States to pay in advance a portion of the Plan 6 costs.

Under the Reclamation Safety of Dams Act Amendments of 1984, 15 percent of the cost incurred for the modification of Bureau structures due to new hydrologic and seismic information and engineering changes in state-of-the-art dam design criteria must be paid by the local beneficiaries. To date, the Salt River

Project has expended approximately $1.5 million, and is prepared to pay to the U. S. Treasury an additional $5 million in fiscal 1988.

In the past, this Committee has been most helpful in providing the Bureau with appropriations sufficient for remedial work on the dams located above the Phoenix metropolitan area. This year, the Administration has recommended some $20 million to proceed with modifications at Theodore Roosevelt Dam, of which some $6.9 million is designated for safety work and some $8 million to commence construction of an additional spillway at Stewart Mountain Dam. It is our understanding that the Bureau indeed has the capability to expend all these monies in fiscal year 1988. Therefore, we respectfully urge you to appropriate the funds.

The Committee may be aware that the seriousness of the situation in Arizona was emphasized recently in an article in the Wall St. Journal which listed potential dam disasters around the country. Among those quoted by reporter Bruce Ingersoll was Neil Parrett, the Bureau of Reclamation's chief of dam safety.

In part, Mr. Ingersoll wrote:

> "Several Reclamation Bureau dams, including four on the Salt River and two on the Verde River in Arizona, are vulnerable to 'overtopping' by a superflood. The crucial dam is a national historic monument, Theodore Roosevelt Dam. If it were overtopped by the probable maximum flood on the Salt, the top of the dam would crumble, triggering a 'domino effect,' says the bureau's Mr. Parrett.

> "The flood would heavily damage two downriver dams, knock out a third and surge on towards Phoenix. 'Phoenix gets drowned,' Mr. Parrett says. An estimated 250,000 people would be flooded. Property damages would hit $9.5 billion."

Again Mr. Chairman, on behalf of the Salt River Project, I thank you for this opportunity to submit our views.

STATEMENT OF ROBERT F. BARCELLO, PRESIDENT OF THE BOARD OF DIRECTORS, NEW MAGMA IRRIGATION AND DRAINAGE DISTRICT, ARIZONA

Mr. Chairman and members of the subcommittee, my name is Robert F. Barcello. I am president of the board of directors of the New Magma Irrigation and Drainage District which comprises approximately 27,000 acres of irrigated land in northeastern Pinal County, Arizona. On behalf of the board of directors of the district, I wish to thank you for the opportunity to present this statement and to express our full support of the Governor's testimony which has been presented to you.

I am pleased to report to you that, as a result of the support of your subcommittee and the Congress in meeting the schedule of funding for the Central Arizona Project [CAT] and its irrigation distribution systems, construction is completed on three of the district's four distribution lateral systems and CAP water is now being delivered to district lands. The care, operation and maintenance of these three lateral systems were transferred from the United States to the district. The remaining distribution lateral system and the central headquarters and shop are under construction and are scheduled to be completed during 1987.

The total estimated cost of constructing the distribution system project, as set forth in the district's 1982 project feasibility report, is $21.9 million. The costs for completed distribution lateral systems and the bids for construction work currently in progress indicate that all project work will be completed within the initially estimated construction cost.

The district has expended through March 1987 over $4 million of its $7.1 million general obligation bond funds as an "up-front" cash contribution for its share of the project costs for legal, administration and engineering work on acquisition of rights-of-way, design and construction management. In addition to the bond fund expenditures for distribution system construction, substantial costs are being, and will continue to be, incurred by district landowners as they improve their "on-farm" concrete-lined irrigation ditches and laser-level their land in order to achieve water conservation.

The district would like to take this opportunity to acknowledge the excellent cooperation we have received from the Bureau of Reclamation at all levels, and in particular from the regional director in Boulder City, Nev., and from Reclamation officials in the Arizona projects office in Phoenix.

Again, we thank the subcommittee for its support to the Central Arizona Project. With continued timely appropriations by Congress, supplemented by our bond money, we are confident that our distribution system can be completed on schedule.

STATEMENT OF TERRY GODDARD, MAYOR, PHOENIX, ARIZ.

Dear Mr. Chairman committee members, I am pleased to be able to actively support the Central Arizona Project [CAP] funding presented in President Reagan's budget request. The President's request recognizes a new relationship between the United States and the Central Arizona Project beneficiaries. That relationship was memorialized last year in an historic agreement among the United States and 11 Arizona parties which will bring over $371 million in local up-front cost sharing to the Central Arizona Project between 1986 and 1995. During the next 9 years, the city of Phoenix alone will contribute over $33 million to assure completion of the Central Arizona Project including the modification of Roosevelt Dam and the construction of Cliff Dam. In addition, the city of Phoenix will provide $140 million over the life of the project toward repayment of the CAP, as provided by law.

Since 1984, the city of Phoenix has spent over $66 million on the construction of a new treatment plant and distribution system for delivery of the CAP water. This year the city will distribute over 40,000 acre-feet of treated CAP water to our customers, which will make up over 15 percent of our total supply. Ultimately, the Central Arizona Project will supply over one-quarter of the needs of the city's projected 2 million customers. Clearly, Phoenix is committed to the success of the CAP.

The timely completion of the Central Arizona Project, including all of the plan 6 features, is of great importance to the city of Phoenix. Without plan 6, including Cliff Dam, the city will continue to live under the threat of floods like those we experienced in the late 1970's and early 1980's and the potential for a disastrous failure of one of the federal government's upstream dams. Additionally, plan 6 provides badly needed water conservation and recreational functions. Therefore, I respectfully ask that the committee support the President's appropriation request for the Central Arizona Project and safety of dams so that the United States and the people of Arizona can finish this project as rapidly as possible.

Completing the Central Arizona Project on schedule would be a hollow victory for both the United States and Arizona, if the Colorado River water was then too salty to use. Desalting plants are enormously expensive to build and operate, therefore, it is important to deal with the problem at its source. The Colorado River Salinity Control Program is designed to accomplish source control. It is vital to the city of Phoenix that sufficient funds be allocated to keep this program on a reasonable schedule. Again, I ask for the committee's consideration and support.

Finally, the Bureau of Reclamation has initiated a program to investigate the potential for weather modification through cloud seeding along the Mogollon Rim in Arizona. I am told that this program could increase local surface water supplies by as much as 10 to 15 percent without adverse environmental impacts. I have instructed the city's staff to work with the Bureau of Reclamation and other local Arizona interests to attempt to develop a cost-sharing agreement in which the city of Phoenix could participate. I encourage you to appropriate sufficient funds to the Bureau of Reclamation's atmospheric resources research budget to support this effort.

On behalf of the 900,000 citizens of Phoenix, I want to thank the committee for its continuing support for these important programs.

STATEMENT OF THE IRRIGATION AND ELECTRICAL DISTRICTS ASSOCIATION OF ARIZONA

Mr. Chairman and members of the subcommittee, I appreciate this opportunity to appear in support of our Governor, Evan Mecham, as he explains to you the need to continue the appropriations for the Central Arizona Project.

The Irrigation and Electrical Districts Association of Arizona is a nonprofit Arizona association composed of irrigation, electrical and water conservation districts and the Ak-Chin Indian Community. Our district members have contracted for over 75 percent of the non-Indian agricultural water supply of the Central Arizona Project. Thus, we have a vital interest in the timely completion of the project. Our members were among the first supporters of the Central Arizona Project and have shown their continuing support, as the Governor has told you, by pledging their lands to fund over $60 million of bonds for distribution systems to our members. After four decades of struggle, we saw the first CAP water delivered last year and just this spring witnessed the initial deliveries into the Santa Rosa Aqueduct, the largest single distribution system of the project. We have put our money where our mouth is. We have mortgaged our lands and we have bet on Arizona's future.

We have also accepted the responsibility for conservation. For every acre-foot of water delivered to agriculture from the Central Arizona Project, an acre-foot of ground water will not be pumped. Instead, it will be conserved in the least expensive and most efficient,way, ground water can be conserved—by leaving it where it is. Our members are also exploring ways to conserve water in agricultural applications. Achieving,these conservation measures though is significantly dependent on timely completion of the Central Arizona Project. We are exploring new technologies, recharge applications and supporting the efforts of the Bureau of Reclamation to investigate the potential for weather modifiction in central Arizona. All of these technologies may be necessary to guarantee long-term water supplies in our area. The Central Arizona Project, however, is the single key to success in this effort. We urge your continued support for the project in order that we might plan for the water supplies of the future, not only for agriculture, but for the hundreds of thousands of people who are migrating to central Arizona.

Thank you for the continuing support you have given the Central Arizona Project.We urge you to provide the funds to finish the project as quickly and efficiently as the Bureau and we can work together to get it done.

STATEMENT OF THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

The Metropolitan Water District of Southern California again supports appropriations for the Central Arizona Project so that the Bureau of Reclamation may continue construction of the various features of this program. While project water is available in the Phoenix area through facilities to that point, other parts of the state included in the authorizing legislation are still some years away from receiving service. This includes Tucson, which remains the most populous area of the West dependent upon ground water.

Metropolitan has supported the project since passage of the 1968 authorizing legislation. At that time, benefits for the entire Colorado River basin were developed and the needs of central Arizona were recognized. In the very arid regions of Arizona where seriously declining ground water levels are being experienced, water demand is increasing to serve its rapidly expanding population.

While the original plans for the Central Arizona Project were primarily in terms of an irrigation project, the rapidly developing growth indicates that it will also provide large amounts of water for domestic and municipal purposes. The needs of Arizona, one of the nation's fastest growing states, will be served in large part by this project and it is important that it move ahead. We request that your committee again provide adequate funding for the Central Arizona Project.

CLIFF DAM OPPOSITION

Senator DECONCINI. Thank you, Governor Mecham.

I have a few questions, let me direct them to you.

I know negotiations have been underway for some time to settle outstanding water claims of the Fort McDowell, and Salt River, Pima, and Maricopa Tribes.

Has your office been involved in these negotiations since you took office, and do you support the tentative agreement that was made prior to your taking office?

Second, is the Cliff Dam a central component of this agreement?

Governor MECHAM. We have been peripherally involved through the Water Resources Department relating to that, but not as a direct participant in those negotiations. We are monitoring them, and, of course, the concept and what they are trying to accomplish, of course, we support. We look forward to bringing those to a conclusion in an agreeable way.

Cliff Dam, yes, is a very important part of that concept. I think, without Cliff Dam, it might be very difficult to come to an agreement with the parties involved because I think it is such an absolutely necessary part of that program.

Senator DECONCINI. Governor Mecham, of great interest to many proponents of the CAP, particularly the state water interests, is the pending law suit brought by smme opponents of Cliff Dam. Can you bring the committee up to date on that law suit, and whether or not it could impact contracts that the Bureau of Reclamation exercised to let the new Waddell Dam this year?

Governor MECHAM. I can't comment in detail on the law suit. I am aware of it. We are concerned about it. All things are being done to bring it to a conclusion as rapidly as possible. The answer really is that we hope to bring a conclusion to it in a timely fashion so that it really will not impact at all on the plans to go ahead with the project.

Senator DECONCINI. Could you, for the record, Governor, have your office supply us with an update of where that law suit is. I believe something is pending now; Jay Rhodes has followed it very closely, and I have not. I would like the committee here to have it, if you could supply it to us.

Governor MECHAM. We will see that you get that. Everything available to us at this time will be in your hands.

STATE GROUND WATER LEGISLATION

Senator DECONCINI. Thank you, Governor.

One last question. You stressed repeatedly the efforts undertaken by the state and local levels to implement a strong ground water conservation program, and you indicate your support for the continued implementation of the ground water code.

Are you aware of pending legislation before the state legislature that would make some modifications in the code, and if so, what impact do you think those modifications would have on Arizona's ability to achieve a safe yield?

Governor MECHAM. Yes; I am aware of it. I am not sure from where it is emanating. We are monitoring what is being discussed, and we intend to be a party. I will have quite a lot to say about it before anything becomes a law, as you well know.

If it is a matter of a little tuning up for a few people, or minor things, but we will now allow anything that will impact upon our ability to really accomplish our goal of having the water the water equalization in time. If it becomes a serious matter, we will certainly bring all parties together and make sure that the agreement, if there is any tuning up, will not affect our overall goals, and rest assured that I am committed to that.

Senator DECONCINI. Thank you, Governor. I think that it is very helpful to have on the record your leadership and commitment to ensure that the state has a right to change the water laws that seem best for the people, and your determination and understanding of the significance of how that bears on the CAP and the federal government.

Senator McCain, do you have any questions?

Senator MCCAIN. No, Mr. Chairman. I would just like to again express my appreciation to the Governor for his very strong statement, his obvious commitment to the project and to Cliff Dam. We know that he has a very busy schedule and we appreciate your being here.

I think that it is important, particularly since you are new to your office, as well as I am new to mine, that we have a clear record of support. I think that it is going to be very important as we wage the battles ahead. Thank you, Governor.

Senator DECONCINI. Congressman Jay Rhodes, do you care to make any comment?

Mr. JAY RHODES. First of all, Senator, let me thank you for your courtesy, as one of the newest Members of the House. I have no questions. I would like to join with you and Senator McCain in commending the Governor for his very strong statement, and I guess welcome both of us to this new team. I am sure we are going to be as successful in the future as the old team was in the past. I am looking forward to working with you.

Senator DECONCINI. Speaking of the old team only in seniority, Congressman Rudd, do you care to put any statement in the record?

Mr. RUDD. No, thank you, Mr. Chairman, I don't have a statement, but I do want to express my deep appreciation to you, Senator DeConcini, for the honor of sitting on the august committee with you. I want to express my deep appreciation for the tremendous contribution you have made to this project in the state of Arizona.

Senator DECONCINI. Likewise, Congressman Rudd, you have really done a yeoman's job over the years on the House Appropriations Committee. Long before I was there, the senior Congressman Rhodes was there as a member of that subcommittee. I remember working for Governor Goddard at the time, and we relied on Congressman Rhodes and Congressman Udall so very, very much.

John, we are glad to have you here, and your leadership. If you would care to make any statement, we would be glad to hear it now.

Mr. JOHN RHODES. I just want to associate myself with what Congressman Rudd and Congressman Jay Rhodes have said, and Senator McCain, especially in thanking you, Mr. Chairman, for your courtesy. As I said to you earlier, it is certainly nice to have a friendly face with a gavel in his hand.

Governor, you have, I think, said exactly what Arizona wanted to have said, and I compliment you on your very fine statement, and on the leadership that you are giving us.

Governor MECHAM. Thank you.

Senator DECONCINI. Thank you, Governor, very much.

The record will remain open to put into the record at a later time any statements by water interests or governmental entities in the state of Arizona.

BUREAU OF RECLAMATION BUDGET AND POLICY RECOMMENDATIONS

STATEMENT OF THOMAS F. DONNELLY, EXECUTIVE VICE PRESIDENT, NATIONAL WATER RESOURCES

Senator DECONCINI. We will now go to the National Water Resources Association and Tom Donnelly, the executive director.

Mr. Donnelly, we welcome you. Your full statement will appear in the record, if you would like to summarize it.

Mr. DONNELLY. Thank you, Mr. Chairman, I will be brief.

Mr. Chairman, I am Tom Donnelly, executive vice president of the National Water Resources Association, and I appear before this committee today to express the association's concerns over the President's fiscal year 1988 budget request for the Bureau of Reclamation.

From our standpoint, a proposal which pits project against project and state against state is totally unacceptable. The fiscal year 1988 budget proposal for the Bureau of Reclamation does exactly that.

While we fully support a policy of efficiency in construction funding, we totally reject the idea that the President's request accomplishes this stated goal. After considerable review and discussions with state and local officials, engineers, and financial consultants, we are convinced that any cost savings that would be realized by expediting construction of the so-called priority projects would be offset by penalties, increased costs, and lost repayment revenues on those projects delayed.

The lowest overall cost to the federal government can only be accomplished by funding all projects currently under construction at their maximum level. This would mean a construction budget of approximately $800 million in fiscal year 1988.

This level of funding would: One, result in a greatly reduced total cost to the federal government for project construction; and two, bring these projects on line sooner, thus increasing the repayment revenues returned to the federal government.

The operation and maintenance request from the Bureau of Reclamation represents a $20 million shortfall from the amount required to adequately operate and maintain existing projects and facilities. It is important to note that approximately 80 to 85 percent of the O&M expenditures are repaid to the federal government within the year.

This cut in O&M by the Office of Management and Budget represents the type of shortsighted thinking that has resulted in higher costs to the government and, in this case, directly to the water users.

One such example is an electrical transformer at the Folsom Dam in California that recently blew up. It was programmed to be replaced for $20,000 last year. OMB cut the required funds for replacement. The unit failed and leaked PCB's. The cleanup and replacement resulted in a cost to the Federal government of over $300,000, or 15 times the cost required if OMB's shortsighted thinking had not prevailed, and this was also, I would add, a cost that was directly borne by the project sponsors.

Two additional areas of concern, unquestionably, as the scope the reclamation program changes, the Bureau's planning program needs to be restructured in order to effectively address their changing role. A 40-percent reduction in the planning program in no way represents an orderly restructuring to meet future needs.

We would ask your support and the committee's support of a budget which represents a more gradual adjustment and the capability over time.

Possibly the most disturbing element in the Bureau's fiscal year 1988 budget request is an attempt by OMB to thwart the expressed intent of this committee and the Congress when it reauthorized a small reclamation loan program in the 99th Congress.

During the fiscal year 1987 budget process, the Department of the Interior requested five new starts in a small project loan program. OMB agreed to support three new starts contingent upon the Secretary requesting that the Congress require full interest be charged on project costs related to water for irrigation. Congress overwhelmingly upheld the principles of reclamation law and rejected that request.

This year, the Department of the Interior requested $10 million for four new starts. OMB rejected that request based solely on the Congress' rejection of their full cost interest provision last year.

We believe it is time for Congress to send OMB a long overdue message. We, therefore, urge your support for the reinstatement of the four new starts originally requested by the Department of the Interior.

Mr. Chairman, that concludes my testimony. I will be happy to try to answer any questions the committee might have.

[The statement follows:]

STATEMENT OF THOMAS F. DONNELLY, EXECUTIVE VICE PRESIDENT, NATIONAL WATER RESOURCES ASSOCIATION

Mr. Chairman and Members of the Committee:

I am Thomas F. Donnelly, Executive Vice President of the National Water Resources Association, I appear before this Committee today to express the Association's concerns over the President's Fiscal Year 1988 Budget Request for the Bureau of Reclamation.

The National Water Resources Association (NWRA) is a nonprofit federation of associations and individuals dedicated to the conservation, enhancement, and efficient management of our Nation's most precious natural resource, WATER. The NWRA is the oldest and most active national association concerned with water resources policy and development. Its strength is a reflection of the tremendous "grassroots" participation it has generated on virtually every national issue affecting western water conservation, management, and development.

From our standpoint, a proposal which pits project against project and State against State is totally unacceptable. The FY-88 Budget proposal for the Bureau of Reclamation does exactly that.

While we fully support a policy of efficiency in construction funding, we totally reject the idea that the President's request accomplishes this stated goal. After considerable review and discussions with state and local officials, engineers, and financial consultants, we are convinced that any cost savings that would be realized by expediting construction of the so-called "priority projects" would be offset by penalties, increased costs, and lost repayment revenues on those projects delayed.

The lowest overall cost to the Federal government can only be accomplished by funding all projects currently under construction at their maximum level. This would mean a construction budget of approximately $800 million in FY-1988. This level of funding would: 1.) result in a greatly reduced cost to the Federal government of project construction, and 2.) bring these projects on line sooner, thus, increasing the revenue returned to the Federal government.

During our review and analysis of the Bureau's FY-88 budget request, several of our member states voiced concern over the apparent political motivation of this year's budget proposal. Those states which were less than supportive of Republican candidates in the last Congressional elections were clearly the biggest losers. Regardless of the motivation, partisan politics has no place in the decision-making process when the general welfare of the citizens of this Nation is at stake.

The Operations and Maintenance request represents a $20 million shortfall from the amount required to adequately operate and maintain existing projects and facilities. It is important to note that approximately 80-85% of the O&M expenditures are repaid to the Federal government within the year. This cut in O&M by the Office of Management and Budget represents the type of short-sighted thinking that has resulted in higher costs to the government and in this case directly to the water users. One such example is an electrical transformer at Folsom Dam that recently blew up. It was programmed to be replaced for $20,000. OMB cut the required funds for the replacement. The unit failed and leaked PCB's. The cleanup and replacement resulted in a cost to the government of over $300,000 (fifteen times the cost required if OMB's short-sighted thinking had not prevailed).

This is not an isolated example. There are several examples similar to this one.

Two additional areas of concern to our members in this year's budget request are: 1.) the severe reduction in the planning function of the Bureau and 2.) the elimination of four new starts in the Small Reclamation Projects program by the Office of Management and Budget.

Unquestionably, as the scope of the Reclamation program changes, the Bureau's planning program needs to be restructured in order to effectively address their changing role. A 40 percent reduction in the planning program in no way represents an orderly restructuring to meet future needs. Commissioner Duvall stated in his testimony before the authorizing Committees that, "This recommendation in our planning program also further reinforces our committment to eventually complete all the currently authorized projects." This capability cannot simply be turned off and on as the Commissioner suggests. Once the capability is greatly reduced, as proposed, it is difficult to regain. We ask your support of a budget which represents a more gradual adjustment in capability over time.

Possibly the most disturbing element in the Bureau's FY-88 budget request is the attempt by OMB to thwart the expressed intent of this Committee and Congress when it reauthorized the Small Reclamation Loan Program in the 99th Congress.

During the FY-87 budget process, the Department of Interior requested five new starts in the Small Project Loan Program. OMB agreed to support three new starts contingent upon the Secretary requesting that the Congress require full interest be charged on project costs related to water for irrigation. Congress overwhelmingly upheld the principles of reclamation law and rejected that request.

This year the Department of Interior requested $10 million for four new starts. OMB rejected that request based solely on the Congress' rejection of their full interest provision. We believe it's time for Congress to send OMB a long overdue message. We, therefore, urge your support for the four new starts originally requested by the Department of Interior. Those four projects are: United Water Conservancy District, CA; San Bernardino County, CA; Middle Creek Dam, MT; and Upper Yampa Water Conservancy District, CO.

Mr. Chairman, that concludes my testimony. I will be happy to try and answer any questions the Committee might have.

Thank you.

POLITICALLY MOTIVATED BUDGET

Senator DeConcini. Mr. Donnelly, thank you very much for that testimony. I would like to send several messages to OMB, not only on water projects, but a few others. [Laughter.]

We will save that for another day.

Senator McCain?

Senator McCain. I will try to be brief, Mr. Chairman.

Let me say, in your written statement, Mr. Donnelly, you say that, "During your review and analysis of the request, several of the member states voiced concern over the apparent political motivation this year. The states were less than supportive of Republican candidates were clearly the biggest losers," et cetera.

Mr. Donnelly, I reject your statement. I think it is outrageous, and unless you have some kind of absolute proof of that, there is no place for those kinds of allegations, before a committee of Congress. And I would suggest that you provide some kind of proof before you make those kinds of disparaging and unconscionable remarks about some very fine dedicated men and women that serve this administration. In my opinion it taints your entire testimony.

Mr. Donnelly. Senator, I am sorry you feel that way. I will provide you with an analysis that——

Senator McCAIN. Because many of the western states select Republican candidates to represent them in Congress where water projects are, Mr. Donnelly, your statement is phony. It is false and it is outrageous.

Senator DECONCINI. Thank you, Mr. Donnelly.

INLAND WATERWAY NAVIGATION IMPOUNDMENTS

STATEMENT OF A. DENNY ELLERMAN, EXECUTIVE VICE PRESIDENT, NATIONAL COAL ASSOCIATION

ACCOMPANIED BY JOSEPH E. LEMA, VICE PRESIDENT, NATIONAL COAL ASSOCIATION

Senator DECONCINI. Our next witness will be Mr. Denny Ellerman, executive vice president, National Coal Association.

Mr. Ellerman, your full statement will appear in the record, and if you would summarize it for us please.

Mr. ELLERMAN. I am Denny Ellerman, executive vice president of the National Coal Association. I am accompanied today by Joseph Lema, vice president for transportation for the coal association.

The National Coal Association represents a broad spectrum of coal producers and associated industries in the United States. We very much appreciate this opportunity to appear before you this morning in what is one further step in achieving much needed improvements in inland waterways.

Arizona is, as you know, a coal producer. That coal is shipped by water, although a different type of waterway for what we are addressing here, coastal pipeline out of the Black Mesa pipeline. We would like to see more of those.

However, in the meantime, we are very concerned about further improvements on the inland waterways and the nation's rivers where they exist and this proposed appropriation will go toward meeting that goal.

My written statement identifies the inland waterway and port projects that are most critical to coal. Rather than discuss the specifics of those projects, I would like to make a few brief comments on their role as a whole in making coal and America competitive.

Coal is a bulky fuel. Consequently, transportation costs loom very large in the final delivered price of the product and that, of course, is the price at which the competition occurs. As much as two-thirds of that final delivered cost can be accounted for by transportation in some shipments. Consequently, reduction of transportation cost is every bit as important as what we as producers can do at the mine in terms of trying to keep those costs under control and keeping our product competitive in world and national markets.

The improvements which are proposed in the testimony, and in this appropriation, will permit lower cost transportation for coal, not only along the inland waterways, but also in the nation's ports, where we are one of the two principal exporters of coal into the world market.

As far as the inland waterways, 1 in 5 tons is shipped on the inland waterways and, of course, in reducing the cost of congestion in capacity that currently affects some of these lock and dam improvements. It will be a direct benefit to that tonnage.

More importantly, in providing competition for rail rates or for railroads, where most of the coal is transported, it serves to keep a lid on that even greater tonnage and provides equally important indirect benefits in terms of providing cheap transportation or cheap energy cost to consumers.

In the ports, with respect to the port improvements, greater debts will permit larger tonnages to be shipped abroad and, therefore, to decrease those costs. The world coal trade has increasingly shifted to the larger vessels which will need the deeper ports. The improvements proposed here will keep us fully competitive and being able to stay and to maintain, if not increase, our share in what is an extremely competitive market.

The Water Resources Development Act of 1986 cleared the way for these much-needed improvements on the inland waterways and the ports. It developed what we regard as a fair cost-sharing provision, which we very much support and are glad to see going forward. This appropriation addresses the federal share.

The private share, with respect to these projects, has been put forward and all that is needed now is the federal share to go further along the road in making these projects go forward and accomplishing these improvements.

I commend you, Mr. Chairman, for your fast action in holding these hearings and implementing the Water Resource Development Act of 1986. Taking this near final step in getting these improvements in place will greatly assist in keeping coal and America competitive.

Thank you, Mr. Chairman.

Senator DECONCINI. Mr. Ellerman, thank you for your statement, and I think it is most appropriate that we have a summary of some of the particular projects, looking at your statement here. It is most helpful for the committee to have such an analysis and I appreciate that very much.

Your full statement, as I said, will appear in the record without objections. I have no questions.

Senator McCain?

Senator MCCAIN. No questions.

Senator DECONCINI. Thank you very much.

Mr. ELLERMAN. Thank you very much, Mr. Chairman.

[The statement follows:]

STATEMENT OF A. DENNY ELLERMAN, EXECUTIVE VICE PRESIDENT, NATIONAL COAL ASSOCIATION

SUMMARY

The National Coal Association (NCA) requests appropriations for certain inland waterways lock construction projects and for deepening of harbors and shipping channels at a number of coastal ports. The inland waterways system of the United States represents a strategic component of our nation's freight transportation network on which private water carriers provide efficient, competitive services essential for movement of coal and other bulk commodities. A few obsolete locks must be replaced and their capacity increased in order to preserve the economic efficiency of the system and competitive transportation services furnished by an array of barge lines

Similarly, to the extent they can accommodate large vessels engaged in world trade, our nation's ports constitute a vital part of the distribution system required for exporting coal produced in the United States to other countries. At present our ports can not fully load bulk carriers in the 150,000 deadweight-ton class which are utilized to transport coal produced in other countries that are our competitors in world coal markets. That is due simply to inadequate drafts which now can only accommodate smaller vessels, thus increasing the ocean freight rate per ton for U.S.-produced coal. By deepening harbors and shipping channels at coastal ports, coal and other bulk commodities produced in the U.S. will be more competitive in world markets, further enhancing our trade balance.

Project Request	Description	FY88 Appropriations
William Bacon Oliver Lock	Replacement	$ 22,000,000
Gallipolis Locks	Replacement	8,000,000
Gray's Landing (Lock #7)	Replacement	6,800,000
Point Marion (Lock #8)	Replacement	1,100,000
Winfield Lock	Replacement	1,750,000
Lock #26 (Mississippi R.)	Add Second Chamber	4,000,000
Olmsted (Locks #52 & 53)	Engineering & Design	2,500,000
Locks #2, 3 & 4 (Mon. R.)	Study & Engrs. Report	850,000
Baltimore Harbor	Channel Deepening	$ 47,000,000
Norfolk (Hampton Roads)	Channel Deepening	12,165,000
Mobile Harbor	Channel Deepening	16,200,000
Mississippi River (from Baton Rouge to Gulf)	Channel Deepening	31,800,000
Charleston, S.C. Harbor	Channel Deepening	8,000,000

Mr. Chairman, my name is A. Denny Ellerman. I am the executive vice president of the National Coal Association (NCA). NCA represents coal producers, coal sellers, consumers of coal, and other organizations associated with the coal industry in the United States.

NCA warmly appreciates this opportunity to appear before the subcommittee to express our request for appropriations that will allow certain critical navigation improvement projects to be constructed on our nation's strategic inland waterways system and at a number of coastal ports. Efficient, competitive inland waterways transportation and the ability to accommodate modern ocean bulk carriers in the 150,000 deadweight-ton class at our coastal ports are essential factors in achieving full utilization of our nation's abundant, secure energy resource, coal.

Coal produced in the United States represents a valuable asset to our economy in several ways. However, it is vital that our inland waterways and coastal ports be improved so that U.S.-produced coal will capture optimal shares of our nation's energy requirements and of markets for coal in other countries to which our coal is exported. Certainly it is the total delivered price of coal, including supply of the commodity and of inland as well as ocean transport services required to move coal to consumer points, that weighs most on its penetration into domestic and export markets Inland transportation accounts for about one-third to as much as one-half or more of coal's delivered price to utility and industrial plants in the United States and to ports engaged in exporting U.S.-produced coal to other countries.

Furthermore, our ports today can not accommodate modern ocean bulk carriers in the 150,000 deadweight-tons class because their harbors and shipping channels are too shallow. Yet other coal-producing countries with which the United States must compete in supplying coal can already handle these large vessels at their ports, as can many of the countries that import coal. Our present limitations with regard to size of vessels that can be accommodated prevents our having the advantage of lower ocean freight rates per ton due to economies of scale and crew requirements which are about the same for 150,000 deadweight-ton vessels and the much smaller Panamax-size bulk carriers in common use today. Clearly this situation has a negative effect on the total delivered price of U.S.-produced coal overseas and is harmful to our competitive stance in exporting coal to other countries.

Mr. Chairman, we are in a fortunate position to overcome the problems I have just mentioned due to passage and enactment of the Water Resources Development Act of 1986, Public Law 99-662. NCA was closely involved for many years in the legislative process that led to the enactment of that legislation simply because the preceding 16 years of inaction on navigation project authorizations were endangering coal's competitive capabilities in the energy markets. Now, as a result of the 1986 Act, we have many inland waterways and port construction projects which are highly warranted ready for appropriations that will lead to timely construction and the benefits which will accrue to our economy through their implementation.

Turning now to specific project requests, NCA urges that appropriations be provided for six lock construction projects and for five projects involving the deepening of harbors and shipping channels at coastal ports, all of which have been authorized by the Water Resources Development Act of 1986. The lock construction projects are: William Bacon Oliver on the Warrior River in Alabama, Gallipolis on the Ohio River in Ohio and West Virginia, Gray's Landing (Lock #7) and Point Marion (Lock #8) on the Monongahela River in Pennsylvania, Winfield on the Kanawha River in West Virginia, and addition of a second lock chamber at Lock #26 on the Mississippi River in Illinois and Missouri. The projects to deepen harbors and shipping channels at coastal ports are: Baltimore Harbor, Norfolk Harbor and Channels at Hampton Roads, Virginia, Mobile Harbor, the Mississippi River from Baton Rouge, Louisiana to the Gulf of Mexico, and Charleston, South Carolina Harbor. In addition, we urge that appropriations be provided for engineering and design work at Olmsted (Locks #52 and #53) on the Ohio River in Illinois and Kentucky and for study and the preparation of the engineer's report for replacement of Locks #2, 3 & 4 on the Monongahela River in Pennsylvania.

Each of these eight inland waterways projects and each of the five projects at coastal ports are incorporated in the FY88 budget request for the civil works program of the U.S. Army Corps of Engineers dated January 1987. NCA's request for appropriations for the 13 projects coincide with the amounts stated in the Corps of Engineers budget request for FY88, except in two instances where slightly higher amounts are recommended. I have noted these on the following table which summarizes the project requests and shows the portions that would be furnished by revenues in the Inland Waterways Trust Fund.

Project Request	Description	FY88 Appropriations
William Bacon Oliver Lock	Construction of Replacement	$ 22,000,000 (includes revs. of $ 11,000,000 from trust fund)
Gallipolis Locks	Construction of Replacement	$ 8,000,000 (includes revs. of $ 4,000,000 from trust fund)
1/Gray's Landing (Lock #7)	Construction of Replacement	$ 6,800,000 (includes revs. of $ 1,000,000 from trust fund)
Point Marion (Lock #8)	Construction of Replacement	$ 1,100,000
Winfield Lock	Construction of Replacement	$ 1,750,000
Lock #26 (Mississippi R.)	Construction of Second Chamber	$ 4,000,000 (includes revs. of $ 2,000,000 from trust fund)
2/Olmsted (Locks #52 & 53)	Engineering and Design -- Mapping, Foundation Investigations & Hydraulic Modeling	$ 2,500,000
Locks #2, 3 & 4 (Mon. R.)	Surveys, Condition Studies, and Draft Engineers Report	$ 850,000

1/$3,500,000 above amount in Corps of Engineers FY88 budget request.

2/$1,000,000 above amount in Corps of Engineers FY88 budget request.

Baltimore Harbor	Harbor and Channel Deepening (P.L.99-662)	$ 47,000,000
Norfolk Harbor & Channels at Hampton Roads, Virginia	(same as above)	$ 12,165,000
Mobile Harbor	(same as above)	$ 16,200,000
Mississippi River (from Baton Rouge, LA to Gulf)	(same as above)	$ 31,800,000
Charleston, S.C. Harbor	(same as above)	$ 8,000,000

With regard to footnote 1 in the foregoing tabulation, NCA notes that The Honorable Alan B. Mollohan (D-WV) received a letter dated March 9, 1987 from Colonel Ernest J. Harrell, the Commanding Officer of the Pittsburgh District of the Corps of Engineers, in which Col. Harrell states:

> It has been determined that a total of $6.8 million could be used in FY88 on Gray's Landing Lock and Dam. This increase over the $3.3 million in the President's budget would permit us to initiate construction.
>
> The additional capability on the Gray's Landing project reflects the readiness of the work for accomplishment.

The Gray's Landing project, in our estimation, deserves the higher level of appropriations as shown above to total $6.8 million both due to the state of readiness of the work and the fact that serious flooding caused catastrophic problems on the Monongahela River in the vicinity of Gray's Landing and Point Marion (Locks # 7 & 8) last year which resulted in several barges breaking loose from their moorings and becoming lodged on the dam structure.
In regard to footnote 2 in the tabulation, NCA believes that the situation with regard to safe, efficient navigation at Olmsted on the Ohio River (Locks #52 & 53) calls for urgency in replacing the

facilities to the extent that $2.5 million should now be appropriated instead of the $1.5 million in the Corps of Engineers' FY88 budget request, so that preliminary work can be performed this year leading to expedited replacement of the obsolete facilities.

Before concluding my statement, I would like to offer some more detailed remarks which will underscore the importance of moving forward now with the requested appropriations and the implementation of the construction projects. Perhaps the most salient figures that reveal the criticality of the requested appropriations deal with the use of the facilities involved. For example, about one out of every five tons of coal produced in the United States is carried on the inland waterways to domestic consumers and to the port facilities at Mobile and along the Mississippi River from Baton Rouge, Louisiana down through New Orleans to the Gulf of Mexico where the river shipments are transferred to coastal barges or to oceangoing vessels for subsequent movement coastwise to domestic consumers or to overseas destinations.

We believe that share will likely grow to one out of every four tons of coal produced due to the competitiveness of barge transportation. For instance, barge shipments incur rates of about one-half cent per ton-mile, and in any event much less than one cent per ton-mile, whereas rail rates are generally on the order of three times the barge rates. This means that it is often much better to move coal by truck or by rail to river docks and transfer the cargo to barges, than the alternative which is to carry coal by rail for the entire distance from mines to utility and indusrial plants or to coastal ports. However, this much-needed competitiveness in coal transportation will continue in the years ahead only if we are prudent and timely in removing a few bottlenecks that exist due to obsolete, inadequate locks. It is well to remember that when a typical towboat and its set of loaded barges encounters lock-induced delays the costs of such inefficiency will cause losses of $7,500 to $10,000 per waiting day.

Also, we have been selective in recommending projects to be funded on the Ohio, Mississippi, Warrior, Monongahela, and Kanawha Rivers. These rivers together account for 87 percent of all coal tonnage originated on the inland waterways system, and the specific projects all carry highest priorities for improvements identified in the 1981 recommended plan for waterways and ports in the U.S. presented in the final report of the National Waterways Study performed by the Corps of Engineers with significant water carrier, shipper, and other public input. It is well also to keep in mind that water transportation carries some additional benefits that are difficult to relate to dollar amounts of benefit. These include the fact that the availability of efficient water transportation is a key factor in moderating rail rates when rail-water competition exists, and the minimal interuption caused by barge movements through communities compared with other surface transportation modes, except pipelines.

Selectivity also characterizes our recommendations for harbor and channel deepening projects. The five ports included in our list accounted for 76 percent of total U.S. bituminous coal exports in 1985. Agreements have been reached by the Corps of Engineers with non-federal interests involved in most of these projects as required by the Water Resources Development Act of 1986. Cost sharing has been set, authorizations are on record, now appropriations should flow

STATEMENT OF JOSEPH E. LEMA, VICE PRESIDENT FOR TRANSPORTATION, NATIONAL COAL ASSOCIATION

Successful penetration of coal produced in the United States into the inter-fuel competition for utility and industrial markets and into world coal markets relies heavily on rates charged by rail and water carriers for transportation from mines to utility and industrial plants and to ports that are involved in exporting our coal to other countries. The importance of reasonableness in pricing coal transportation services is well recognized by coal producers, coal sellers, consumers of coal, and other organizations associated with the coal industry.

With that in mind, it is useful to examine the effects of two controversial bills passed by the Congress and enacted in 1980 and in 1986 which deal respectively with railroad and water transportation. These are the Staggers Rail Act of 1980 and the Water Resources Development Act of 1986. Each of these represent landmark decisions on transportation policy. For instance the Staggers Rail Act, after about 90 years of railroad regulation, enabled rail carriers to provide private contract service in addition to the traditional public tariff service. The Water Resources Act also marks a major change in policy by setting new user cost sharing requirements for inland waterways and port improvement projects, breaking a 16-year stalemate in authorization of lock construction and deepening of harbors and shipping channels. Each of these major changes in national policy with regard to railroad and water transportation has significant impact on coal utilization. This is readily realized considering that two out of every three tons of coal produced are moved by the railroads, and one out of every five tons are carried on the waterways for substantial portions of movements from producers to consumers and ports, a share that is likely to grow to about one out of every four tons in a few years due to the efficiency and competitiveness of barge lines operating on the inland and intracoastal waterways and along our Atlantic and Gulf Coasts.

Turning to the Staggers Rail Act, it is useful to compare what has happened to railroad coal rates from 1974 to 1986, a 12-year period containing the six years preceding enactment of the legislation and the six years following enactment, another 6-year period ending last year. Over the 12-year period railroad coal rates increased 159 percent while the U.S. Bureau of Labor Statistics (BLS) Producer Price Index (PPI) for all commodities grew only 86 percent, a clear indication that the railroad coal rates have spiraled upward at an alarming pace compared with overall shifts seen in the economy. In fact, according to BLS data, railroad coal rates leaped 101 percent from 1974 to 1980 just preceding the Staggers Rail Act, while the PPI rose only 68 percent; then from 1980 to 1986 railroad coal rates jumped another 29 percent while the PPI rose only 11 percent.

These figures are particularly distressing because the doubling of railroad coal rates in the six years prior to the Staggers Rail Act has not been ameliorated during the period, 1980 to 1986 even though, largely due to the provisions of the Act, railroad productivity in the 1980's has improved 40 percent when expressed in revenue ton-miles per employee-hour paid, 19 percent per gallons of fuel consumed, and 11 percent per total railcars loaded. The further increase of 29 percent in railroad coal rates since 1980, magnifying greatly the extraordinarily high increase of 101 percent from 1974 to 1980, coupled with the substantial gains in railroad productivity enjoyed by rail carriers after the Staggers Rail Act, makes the present level of railroad coal rates in general exorbitant and unacceptable. To underscore the notion that these rates are much too high, it is interesting to note that where new rail-to-rail competition has now emerged for coal moved out of the Powder River Basin in Wyoming during the last two years, the rates under competitive circumstances have dropped by about 20 to 25 percent in several instances. That surely shows a lot of room existed for lowering railroad coal rates while still making the movement of coal a profitable venture for the railroads.

Whereas in most cases only a single rail carrier is available to move coal for much, or all, of the distance from mines to delivery points, the same certainly is not the case with respect to the movement of coal on our inland and intracoastal waterways system. Many barge lines compete for coal traffic, a principal factor in keeping barge rates at about 5 to 10 mills per ton-mile whereas rail rates are usually about 15 to 35 mills per ton-mile and truck rates are often in the range of 70 to 100 mills per ton-mile. Of course, the rates vary largely due to the distances and volumes involved, use of shipper-owned versus carrier-owned equipment, terrain associated with railroad movements, and upstream versus downstream barge movements. Yet, considering all of these key variables, it remains true that barge rates are much lower than rail rates, a condition that often is not negated even though some trucking or railroad movements are required to bring coal to the waterways and additional handling is needed at river coal terminals for rail-to-barge transfer operations including storage. In fact, the presence of areas required for stockpiling coal at river terminals can be useful for blending coal from several mines in-transit prior to ultimate delivery to consumers or to ports for export purposes.

The main point to be made is that barge transportation is a highly desirable element in achieving efficient, reasonably priced coal transportation, both in competition with, and as an adjunct to, railroad transportation. That is why National Coal Association for the past five years has been engaged in an intensive struggle to get needed improvements to the inland waterways authorized, vis-a-vis construction of replacements and capacity upgrading projects at a number of critical locks, while protecting against imposition of unfair and inequitable levels of user charges. That is not meant to say that NCA opposes user cost sharing of construction projects; in fact, we were the catalyst for compromise that has resulted in reasonable increases in waterways user charges, acceptable cost sharing arrangements, and authorization of new construction projects at key locations, through enactment of the Water Resources Development Act of 1986, the last major bill signed into law by President Reagan in the closing days of the previous 99th Congress.

For 16 years a stalemate had existed in regard to project authorizations due to lack of agreement on user cost sharing. That meant that some locks were approaching 50 years old and had become obsolete, yet no revamping was on the horizon, leading to serious concern that our valuable inland waterways system would no longer be in a position to furnish a means for continuing efficient, competitive barge transportation. For example, delays like those being experienced at the Gallipolis Locks on the Ohio River due to obsolete, undersized lock chambers, inadequate equipment for performing modern lockage maneuvers, and poor alignment of approach channels, can cause losses of $7,500 to $10,000 per waiting day for a towboat, loaded barges, and crew temporarily out of service.

In its first term of office, the Reagan Administration was seeking full user cost recovery for construction projects and for operation and maintenance on the waterways. Later that became 70 percent cost recovery. However, water carriers and shippers, including NCA, found such levels of user cost recovery to be wholly unwarranted and potentially destructive, bearing in mind also that the waterways system represents a major asset for national security and for the overall economy and commerce of the nation therefore a rational cost sharing arrangement should be adopted. The Water Resources Act incorporates such an arrangement by: first, continuing to earmark revenues in the inland waterways trust fund which is the repository for barge fuel taxes, for waterways construction projects; second, setting a 50-50 percent matching ratio for costs of construction utilizing revenues from the trust fund and general revenues in the U.S. Treasury; and third, continuing 100 percent federal funding of waterways operation and maintenance costs using general revenues.

That arrangement on cost sharing, in turn, has allowed much needed lock replacements to be authorized at Gallipolis on the Ohio River, Gray's Landing (Lock #7) and Point Marion (Lock #8) on the Monongahela River, Winfield on the Kanawha River, and William Bacon Oliver Lock on the Black Warrior River in Alabama, plus the addition of a second lock chamber at Lock #26 on the Mississippi River at Alton, Illinois above St. Louis. On March 30 and 31 respectively before House and Senate Appropriations

Subcommittees, NCA testified in support of FY88 appropriations for construction of these critical lock improvement projects, all of which have been authorized by the 1986 legislation. Realizing that such projects take five to seven years, and sometimes longer, to be completed, NCA also testified in support of appropriations to complete engineering and design of new lock facilities at Locks #52 and #53 on the Ohio River near its confluence with the Mississippi River and for studies and preparation of an engineer's report on replacement of Locks #2, #3, and #4 on the Monongahela River. We plan also to support appropriations for other lock improvement projects on the Ohio River, the Kanawha River, and the Warrior-Tombigbee River System in Alabama in the future as part of an orderly process of preserving waterways efficiencies and enhancing their competitiveness through the years ahead. The reason is clearly seen by looking at the coal traffic utilizing these waterways in the most recent year for which statistics are available, 1984:

River System	Coal Tonnage In 1984		
	Originated	Terminated	Total Handled*/
Ohio	67,066,000	58,721,000	100,932,000
Monongahela	23,767,000	21,564,000	30,130,000
Mississippi	17,046,000	27,859,000	40,266,000
Black Warrior	14,006,000	11,980,000	13,282,000
Kanawha	9,550,000	787,000	9,570,000
Other	19,533,000	14,564,000	31,777,000

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*/ Includes inbound, outbound, local, and through coal traffic.

It is also important to recognize that, in addition to working out cost sharing arrangements on inland waterways, the Water Resources Act has set cost sharing arrangements for projects to deepen harbors and shipping channels at ports to accommodate larger capacity bulk carriers, including those in the 150,000 deadweight-tons class which are being utilized by our competitors in world coal markets. These larger vessels on the one hand, require greater drafts than now available at major U.S. ports, yet on the other hand, enable significant reductions in costs to be realized in the ocean freight rate per ton of cargo due to their economies of scale and the fact that crew costs are similar for both 150,000 deadweight-ton vessels and the smaller Panamax size vessels currently in common use.

The Water Resources Act provides that the cost sharing for deepening will be such that if the ultimate depth is 20 to 45 feet, non-federal interests will pay 25 percent of construction costs, and if greater than 45 feet, the non-federal share will be 50 percent. Furthermore, a new harbor maintenance trust fund has been created to be the repository for a port user fee of four cents per 100 dollars of value of cargo shipped into and out of each port, with trust fund revenues earmarked for sharing the costs of harbor operations and maintenance. Individual ports are to enter into agreements with the federal government with regard to specific projects and source of non-federal funding for deepening harbors and shipping channels. On March 30 and 31, in testifying respectively before House and Senate Appropriations Subcommittees, NCA urged the Congress to appropriate funds for such projects at Baltimore, Norfolk, Mobile, Charleston, South Carolina, and on the Lower Mississippi River from Baton Rouge, Louisiana to the Gulf of Mexico. Not all of these deepening projects will result in an ability to accommodate fully loaded vessels in the 150,000 deadweight-ton class; however, in each case the port will be in a position to load more tons of coal on larger vessels than previously, a basic factor in reducing ocean freight rates, thus making coal produced in the U.S. more competitive in world coal markets. In recent years, some topping-off operations have been conducted in the Gulf of Mexico and on the Atlantic Seaboard in a successful manner. Later if large vessels can still be loaded only partially at a port due to the depth of harbor and shipping channels, further topping-off in deeper waters may continue; however, these operations probably will be infrequent when several ports are ready to accommodate 150,000 deadweight-ton vessels within their harbors. The coal ports mentioned in NCA's testimony on appropriations on March 30 and 31 have already negotiated agreements with the federal government on deepening their harbors and shipping channels and stand ready to commence dredging. Collectively these ports accounted for more than three-fourths of U.S. coal exports in 1985.

Turning back now to railroad coal transportation, it is clear that new legislation, that being the Consumer Rail Equity Act which has been introduced in the House and the Senate in the 100th Congress, is necessary to implement the balance between the railroads' need for sufficient pricing flexibility and the needs of captive shippers for protection, both of which were intended by the Staggers Rail Act. The captive shipper problem is especially prevalent with respect to coal transportation simply because there often is no intramodal rail-to-rail competition or intermodal rail and water carrier competition for particular coal movements. Where it exists, and we constantly seek effective transportation competition for coal movements, there would be no need for regulation inasmuch as market forces would be in place to stimulate carriers to be efficient and to charge reasonable rates. The gravity of the situation coal faces in regard to railroad transportation is overwhelming when one realizes that the regulatory body responsible for administering railroad regulation and protecting captive shippers from rate abuses ignores the shippers plight and constantly looks for ways to let the railroads extract excessive revenues from coal traffic.

How does the Interstate Commerce Commission do this? It simply adopts regulatory standards which undermine provisions in the Interstate Commerce Act, as amended by the Staggers Rail Act, intended to furnish shipper protection. Five actions or inactions of the Commission since enactment of the Staggers Rail Act bring this to light. First, the Commission says that a railroad shipper is not subject to market dominance, therefore not entitled to seek relief from rail rates charged for the traffic at issue, if the item transported could have been obtained somewhere else or could have been substituted by a commodity obtained elsewhere. The Commission is using the notion that product and geographic competition may exist to frustrate the ability of a shipper to prevent rate abuses. Shipping from a particular origin to a particular destination using the only effective transportation available because no intramodal or intermodal transportation competition is present must be accompanied also by the opportunity to argue the reasonableness of the rate charged.

To set standards like considering product and geographic competition tests for market dominance amounts to evading Commission duties. In the same sense, the Commission sought to evade its duty to protect captive shippers in a second way, by endorsing the railroads' attempt to exempt railroad movements of export coal from regulation. After lengthy litigation before the Commission, the U.S. Court of Appeals, and the Supreme Court of the U.S., we were able to cause the reversal of the Commission's exemption and ostensibly a return of export coal traffic to regulatory protection. However, the predisposition of the Commission to acquiesce to the petition of the railroads for the exemption leads us to believe that the matter must be firmly resolved through legislation.

A third instance of failure by the Commission to be sensitive to a need for assuring that rail rates are reasonable is its stalling on the inclusion of productivity in the determination of the quarterly index utilized to raise or lower rail rates automatically. In failing to incorporate a productivity element in the rail cost adjustment factor, the Commission is ignoring reality in terms of positive strides in rail carrier productivity, some of which must inure to the benefit of rail shippers to be fair and equitable. The same tendency of the Commission not to face reality is seen in the fourth way it flounts problems of shippers; namely, its continual insistence that no Class I rail carrier has adequate revenues. How can that be a realistic determination when railroads are in a position to pay cash for barge lines, trucking companies, other rail carriers, natural gas producers, commercial real estate, and other non-transportation ventures? The Commission's simplistic look at a rail carrier's return-on-investment as the single criterion on which to evaluate the carrier's revenue adequacy is the flaw in the process.

Finally, a fifth example of the Commission's turning away from the needs of captive shippers is its constant search for creative ways to legitimize the gross notion that these shippers can properly be charged "what the traffic will bear". The Commission must be driven to accept that rates charged in the absence of effective transportation competition must bear a rational relationship to the actual costs incurred by the railroad in providing the service. Certainly the rail carrier must recover the variable costs that are attributable to the movement and a fair allocation of the carrier's fixed costs to the traffic, including provision for a rate of return that will be sufficient to attract capital for investment in the business. However, to let a rail carrier charge a captive shipper "what the traffic will bear" is unconscionable. The Commission actually leans toward endorsing inefficiency and permits massive cross-subsidization of competitive traffic by revenues extracted from captive shippers in its attitude toward standards on rate reasonableness.

For coal, this is especially troublesome. The degree of coal's captivity to the railroads for essential transportation is high, and coal represents about 40 percent of total Class I railroad tonnage, by far the highest volume of any commodity moved by railroad. That makes coal a lucrative target of opportunity for enhancing railroad revenues, even to the extent that some shippers of other commodities by railroad are unfortunately willing to merely stand by and see coal contribute an excessive amount of revenues to the railroads, making the position of shippers having good options in relationship to rail carriers and motor carriers competing and available to move their commodities more advantageous.

Going back to an earlier statement, it is worth repeating here that coal shippers, first and foremost, seek competition as the way to acquire reasonable transport services. Where none exists, we must have rational regulation, especially to gain leverage in negotiating transportation contracts with a sole source of essential services. Railroad regulation as administered by the Commission since the Staggers Rail Act has not been implemented in a rational, balanced manner intended by the Congress in passage of the legislation. Five regulatory errors of serious proportions mentioned earlier bear this out. .

In conclusion, then, we believe that having reformed railroad regulation by virtue of the Staggers Rail Act in 1980, it is now time to reform the regulatory body, the Commission, through passage of the Consumer Rail Equity Act which gives specific directions to the Commission with respect to the requirements associated with major aspects of captive shipper protection. The Consumer Rail Equity Act is not as its opponents say, legislation to re-regulate the railroads. The railroads are regulated today under the provisions of the Interstate Commerce Act, as amended by the Staggers Rail Act. It is singularly intended to correct the problems that have been created by the Commission in failing to deliver balanced regulation in the past six years. NCA strongly supports the Consumer Rail Equity Act. So we are dedicating substantial effort to supporting passage of the legislation as developed by Consumers United for Rail Equity and advocated by the Coalition for Rail Fairness and Competition in which NCA joins with utilities, other bulk commodity shippers, and consumer organizations in working for the enactment of the Consumer Rail Equity Act during the 100th Congress.

NATIONAL WATER RESOURCE PROGRAMS

STATEMENT OF HOLLY STOERKER, CHAIRMAN, INTERSTATE CONFERENCE ON WATER POLICY LEGISLATIVE COMMITTEE

Senator DECONCINI. We now will hear from Holly Stoerker, the chairperson of the Interstate Conference on Water Policies.

Ms. Stoerker, let me indicate that your full statement, which I have here, will appear in the record, and if you would summarize that for us please.

Ms. STOERKER. Thank you, Mr. Chairman. It is a pleasure to be here this morning. My name is Holly Stoerker, and I earn my living as executive director of the Upper Mississippi River Basin Association.

However, I am here today appearing on behalf of the Interstate Conference on Water Policy in my capacity as chairman of that organization's legislative committee.

ICWP is the independent national association of state, interstate, and regional water administrators. Since 1959, ICWP has been the voice for state water resource management concerns, particularly with regard to the relationship between state and federal programs and policies.

CORPS OF ENGINEERS ACTIVITIES

On behalf of ICWP, I am here today to testify in support of funding for three specific items in the Corps of Engineers civil works program and in support of increased funding for the Bureau of Reclamation's planning program. Let me begin with the Corps and I will highlight these three areas.

ICWP, in addition to countless others, work diligently for the enactment of the Water Resources Development Act. We view that legislation as far more than a catalogue of flood control and navigation project authorities. It authorizes numerous new studies, program responsibilities, and policy reforms.

ICWP strongly supports funding levels for the Corps of Engineers which will sustain this increased responsibility confronting that organization. In this regard, ICWP strongly supports funding the dam safety programs that were authorized in title 12 of the new Water Resources Development Act.

As you are aware, Mr. Chairman, that includes state assistance for dam safety programs, training of state dam inspectors, research, and the dam inventory. Currently the Corps has budgeted only for the dam inventory in their fiscal year 1988 budget.

What we are here today to suggest is that the fully authorized funding levels be included for the other components of this very important title of law.

Of direct bearing on this request is a survey that was conducted in 1986 by ICWP of state dam safety officials. Financial assistance and training were overwhelmingly cited as high-priority needs in that survey.

A second area of interest to ICWP is the Corps planning assistance to states program, known as section 22. In the recent Water Resources Development Act in section 921 that increased the authorized annual funding levels for section 22 from $4 to $6 million.

Throughout its 13-year history, this program has yielded a wide variety of state selected projects and has been absolutely invaluable in supplementing the water resource management capabilities of the states.

ICWP would, therefore, urge that the full $6 million be appropriated. The Corps budget request for 1988 includes only $3.4 million, which is less than even the amount that was authorized of $4 million, previous to the new act.

The third area of concern to ICWP is the funding for small project authorizations. Funds are appropriated annually for the Corps to undertake without specific project authorization a variety of small projects, such as small flood control projects, clearing and snagging operations, emergency bank protection works, small navigation projects, and beach and shore protection.

In fact, the small projects that are constructed under these general authorizations are the only new construction starts in some states since 1970, with the last true construction authorization law. Since section 915 of the Water Resources Development Act increased national funding levels for seven different small project authorizations.

However, the Corps has requested less funding for most of these authorities in fiscal year 1988 than it was appropriated in fiscal year 1987.

BUREAU OF RECLAMATION ACTIVITIES

Finally, I would like to conclude with a few remarks about the Bureau of Reclamation's budget, because in addition to our concerns about specific aspects of the Corps' budget, ICWP is deeply concerned about the proposed cutback in the Bureau of Reclamation's general planning investigation budget.

In essence, the administration proposes that a majority of the Bureau's planned formulation and advanced planning projects be indefinitely postponed. The obvious tragedy in this is that even if the studies are resumed in the future, the work to date would likely be obsolete.

A budget reduction as drastic as the one proposed will severely cripple the Bureau's planning program, which really reflects on our collective ability to meet this nation's water resource needs.

Thank you for your attention, Mr. Chairman, and I would be happy to answer any questions, if I can.

Senator DECONCINI. Ms. Stoerker, I don't have any questions. I do appreciate your analysis of the problems we face here in water resource programs and I think you have clarified and reasserted them very clearly. I have no questions. Thank you for your statement.

Ms. Stoerker. Thank you.

[The statement follows:]

STATEMENT OF HOLLY STOERKER, CHAIRMAN OF INTERSTATE CONFERENCE ON WATER POLICY LEGISLATIVE COMMITTEE, AND EXECUTIVE DIRECTOR, UPPER MISSISSIPPI RIVER BASIN ASSOCIATION

SUMMARY OF REQUEST

U.S. Army Corps of Engineers

- Dam Safety - $13 million for grants to state dam safety programs
  $500,000 for training of state dam safety inspectors
  $2 million for dam inspection research
- Section 22 Planning Assistance - $6 million
- Small Project Authorities - increase funding over FY 1987 level

Bureau of Reclamation - Retain funding of planning program at FY 1987 levels.

The Interstate Conference on Water Policy (ICWP) is the independent national association of state, interstate, and regional water administrators concerned with water quantity and quality management, conservation, and development. Since 1959, ICWP has been the voice for state water resource management concerns, particularly with regard to the relationship between state and federal programs, regulatory authority, and information exchange.

ICWP has long been committed to a cooperative partnership approach to solving this nation's water resource problems. This partnership requires a non-federal commitment through state and local community sponsors and a federal commitment through both the Corps of Engineers and the Bureau of Reclamation. The budgets of these two major federal water resource development agencies are of particular concern to ICWP. The maintenance of a healthy and viable partnership requires that our federal partners have the means to fulfill their responsibilities under the law.

U.S. ARMY CORPS OF ENGINEERS, CIVIL WORKS

While the FY 1988 budget request for the Corps of Engineers' Civil Works program reflects an increase of 4 percent over FY 1987 appropriations, the increase appears to be relatively modest in light of the recent enactment of the Water Resources Development Act (P.L. 99-662) which authorizes numerous new studies, program responsibilities, and policy reforms. P.L. 99-662 provides more than a simple catalogue of flood control and navigation project authorities. It has the potential for significantly expanding the responsibility of the Corps of Engineers via authorities for study and corrective action of a variety of current water resource problems. ICWP is currently evaluating the array of national and regional studies authorized by P.L. 99-662 for the purpose of recommending priorities to the Corps for future efforts. In general, ICWP supports levels of funding for the Corps that would sustain an expansion of their current mission.

- Dam Safety

  Of particular concern to ICWP is the apparent lack of initiative with regard to the dam safety programs authorized in Title XII of the Water Resources Development Act. Of all the dam safety provisions in that Title, the Corps of Engineers is currently intending to pursue only the dam inventory update and has consequently requested $500,000 for that purpose. However, Title XII of the Water Resources Development Act authorizes a number of other significant and potentially very useful programs for guaranteeing the safety and structural integrity of dams in this country:

State Dam Safety Programs - The Corps of Engineers is authorized to provide grants to states to assist them in establishing and/or maintaining effective programs to assure dam safety to protect human life and property. Significant state commitment is required as well because the state must provide funds for at least 50 percent of the program costs. A National Dam Safety Review Board is to be established to review and monitor the program. In 1986, ICWP conducted a survey of state dam safety officials to identify state program needs and define the appropriate federal role in the area of dam safety. Financial need was overwhelmingly cited as the most urgent need in maintaining a viable state dam safety program. Thirty (30) of the 42 states responding to the survey rated the state grant program of P.L. 99-662 as "high priority."

The proposed FY 1988 budget for the Corps of Engineers includes no funding for grants to states for dam safety program support. ICWP urges that the full $13 million authorized for appropriation be provided including, if necessary, specific Congressional direction to the Secretary of the Army indicating the intended use of these funds and Congressional desire to have the Dam Safety Review Board established.

Training - The Corps of Engineers is also directed to provide training for state dam safety inspectors at the request of any state with an approved dam safety program. ICWP's 1986 survey of state dam safety officials verified the fact that this is a critically important need. When asked how federal assistance can be most beneficially channeled to states, 31 of the 42 responding states rated training as a #1 or #2 priority. Respondents also viewed the training assistance provisions of the Dam Safety Program in P.L. 99-662 as the most helpful to them, giving it an average rank of 1.71 on a scale of 1 to 5. Clearly, training is a critical need and one for which the states look anxiously to the federal government for assistance.

The proposed FY 1988 budget for the Corps of Engineers includes no funding for training of state dam safety inspectors. ICWP urges that the full $500,000 authorized for appropriation be provided and that the Secretary of the Army be directed to offer such assistance to qualifying states.

Research - The Corps of Engineers is further directed to undertake a program of research to develop improved techniques and equipment for rapid and effective dam inspection. This program was intended to closely complement the state inspectors training efforts. All applicable technical advances need to be investigated for future effective dam safety inspection.

The proposed FY 1988 budget for the Corps of Engineers includes no funding for dam inspection research. ICWP urges that the full $2 million authorized for appropriation be provided and that the Secretary of the Army be directed to undertake the research program as authorized including opportunities for state participation.

- Section 22 Planning Assistance

Section 921 of P.L. 99-662 increased the authorized annual funding level for the Section 22 Planning Assistance to States Program that was established in 1974 from $4.0 million to $6.0 million nationally and from $200,000 to $300,000 for each state. Throughout its 13-year history, the Section 22 Program has yielded a wide variety of state-selected products1/ that have been invaluable in supplementing the water resource management capability of all the states. However, one obstacle to full implementation of the Program has been the approval of annual appropriations at less than the authorized level. In FY 1987, $3 million was appropriated and the Administration has requested $3.4 million for FY 1988. These figures are still well below the $4 million authorized prior to the enactment of P.L. 99-662. Because many states continue to experience budget reductions and the loss of capability to carry out needed water planning and management activities, the expanded Section 22 Program established in P.L. 99-662 has the potential to contribute significantly to maintaining stable water resource management programs at the state level. Therefore, ICWP encourages the Congress to appropriate the full $6.0 million authorized in P.L. 99-662 and to further direct that the Corps' Section 22 lead districts reasonably and equitably distribute the funds for use by each state during Fiscal Year 1988.

- Small Project Authorizations

During the past 40 years, the Corps has completed numerous projects throughout the United States under the Small Project authorities contained in various pieces of federal authorizing legislation. This includes small flood control projects, clearing and snagging operations, emergency bank protection works, navigation projects, and beach and shore protection. In fact, small projects have represented the only new construction starts in some states since 1970, the year the last true construction authorization became law. Section 915 of P.L. 99-662 provided increased national and individual project funding levels for seven different Small Project authorizations. Because of the great success of the Small Project programs in actually addressing water resources problems, ICWP urges the 100th Congress to appropriate an increase over FY 1987 funding levels for the Small Project authorities in Section 915 of P.L. 99-662.

BUREAU OF RECLAMATION

Notwithstanding a requested increase in total annual appropriations for the Bureau of Reclamation's FY 1988 budget, the Administration has proposed to:

1) Selectively fund some Bureau construction projects, allocating a larger share of total resources to maintain or accelerate their completion date; and

2) Cut the Bureau's General Planning Investigation budget approximately 61 percent.

In essence, the Administration proposes that a majority of the Bureau's plan formulation and advanced planning projects be "indefinitely postponed." The FY 1988 proposal would also greatly reduce funds for the Bureau's Technical Assistance to the States Program as well as virtually eliminate their Atmospheric Water Resources Mangement Program, which encompasses the only comprehensive weather resources development program in the nation.

You will recall that the Administration has previously proposed to merge the Bureau and the Corps of Engineers, but received a great deal of opposition from the Western States. Most recently, the Administration proposed redistributing the Bureau's FY 1987 General Investigations budget to cover obligations to date, relocation, severence and leave payment costs in an effort to lay the groundwork for major restructuring of the Bureau's planning program. Obviously Interior's new policy could easily be construed as a "back door" approach to eventually doing away with the Bureau altogether -- by accelerating construction of projects nearest completion and by phasing out their planning program, which will obviously result in no new projects in the future. Even if delayed planning studies were resumed in the future, the work completed to date would most likely be obsolete -- wasted.

In summary, such a drastic budget reduction will severely cripple the Bureau's planning program and result in delays in meeting many pressing water resource problems. The Bureau's planning capability is a reflection of the ability to meet future as well as current water resource needs. To dramatically curtail spending for planning is to limit the means of solving our nation's water problems.

ICWP strongly urges that funding of the Bureau of Reclamation's planning program be continued at FY 1987 levels.

1/ For example, flood hazard and regional water supply studies in Texas, archeological and cultural surveys of State Wild and Scenic Rivers in Kentucky, inventory and analysis of urban flood problems and strategic planning studies in Illinois, etc.

STATEMENT OF CARL W. RIEHN, CHAIRMAN, WATER RESOURCES CONGRESS

Senator DECONCINI. We will next hear from Carl Riehn, chairman of Water Resources Congress.

Mr. Riehn, your full statement, which we do have before us here with the accompanying two resolutions, will appear in the record as if read, and would you please summarize it for us.

Mr. RIEHN. I will, Mr. Chairman, and I appreciate the opportunity to appear before this committee. I am Carl W. Riehn, general manager and executive director of the North Texas Municipal Water District.

I am here today testifying as chairman of the Water Resources Congress. This has been a good year to be the chairman of the Water Resource Congress, because the Congress has given us a national water resources program, for the first time in a long time, and we are here to say, thank you to the committee and all the other Congressmen and Senators that had anything to do with that particular program.

We also do give wholehearted support to the Corps of Engineers budget. I specifically wish to thank you for the Cooper Lake and channels project in Texas. That is one of mine that we have been working on since 1960 and we appreciate the time and effort that have been placed on that project. There are many others, both in Texas and all over the nation, that have basically put flood control navigation, water supply, and generation of hydropower to good beneficial uses.

However, I would like to call to your attention that in the Corps' budget there is one oversight that bothered our committee members when they met in a project group in Denver in January 1987. We were very, very concerned that the small project for the city of Waterloo, Iowa, on bridge replacements—that were needed to ensure its flood-free operation and that were authorized in Public Law 99–662—had been omitted from the budget.

They are the local folks that had already spent $20 million to try to avoid this flooding and now they are going to have it, it seems, because of this small oversight, and we wish that a review would be made of that.

We also, in reviewing the Bureau's budget, are a little concerned about the way those funds are being distributed. Specifically, in our membership, one grave concern came up over the Garrison diversion projects in North Dakota, where the people have been promised for years this project would begin to move, and after they have worked diligently to come to an agreement, then their funding is reduced to some $2.5 million. We certainly wish you would look at that.

On a whole, as I said, we are very proud of the Congress. It has moved forward in water resource development and we want to thank you for interest and pledge to you our support to work with you and others in this nation for its beneficial use.

Senator DECONCINI. Mr. Riehn, thank you very much. I certainly concur with your observations of some of the projects that seem to get left out, the Garrison project in particular. I have been a supporter of that.

It makes good sense, and I assure you my continued support. The committee will look at your recommendations very closely. Thank you.

Mr. RIEHN. Thank you.

[The statement follows:]

STATEMENT OF CARL W. RIEHN, CHAIRMAN, WATER RESOURCES CONGRESS

I am Carl W. Riehn, General Manager and Executive Director of the North Texas Municipal Water District, testifying today on behalf of Water Resources Congress, the oldest national water resource organization, of which I have the honor of serving as Chairman.

Thousands of water projects built in river basins from coast to coast have had the backing and support of our association. And being in the water supply business, I have firsthand experience of the value of organization support as the cornerstone of water project development.

This is a good year to be chairman of Water Resources Congress or any other water-related organization for that matter. These are times of optimism over the future of water resources development. No longer is it a case of whether this or that project will be built. Today it's a case of when the project will be started. No longer do those of us who work for maintaining a strong water project inventory have to sit on the water's edge waiting for passage of an authorized bill. You, the Members of Congress, have ended the wait and the uncertainty by passing the Water Resources Development Act of 1986. And, if for no other reason, I am here to convey the appreciation of our membership to this Subcommittee for your commitment and untiring efforts to get our program moving again after so many years of inactivity.

Were it not for your staunch support and keen interest in providing the legislative tools to restore our water resource project inventory, I'm afraid we all would be back to square one in river basin development. Instead of spending our efforts in support of the Federal water resources budget, we would be stacking sandbags on the river banks, moving our bulk goods exclusively by highway and rail, hauling water in tank cars and doing rain dances to get water to fall on thirsty acres.

And so, on this occasion, Water Resources Congress gives wholehearted approval to the civil works budget of the Corps of Engineers.

We note with a great deal of satisfaction that flood control, the fountain- head from which several other multiple benefits spring, has fared well in the Corps' Corps' Fiscal Year 1988 budget. As a water watcher from Texas, I am pleased to note the funding levels proposed for Cooper Lake and Channels; Joe Pool Lake; Ray Roberts Lake and the San Antonio Channel Improvement to mention a few of the Texas projects.

Stage two of the Phoenix, Arizona project; several California flood control projects such as Dry Creek, bank protection along the Sacramento River, Mt. St. Helens sediment control in Washington and Fountain Creek at Pueblo, Colorado are more examples of sound flood control investments.

Down in Florida the Central and Southern Florida project; Kentucky projects together with the hurricane protection works for Lake Pontchartrain, Larose to Golden Meadow and New Orleans to Venice all have satisfactory budget amounts. Flood control works under the Mississippi River and Tributaries project such as the Atchafalaya Basin, the Upper Yazoo Basin, channel improvements and levees appear to be adequately funded

New life and high hopes for the barge and towing industry are expected with the promised construction push at William Bacon Oliver; Gallipolis; Grays Landing; Montgomery; Point Marion; Bonneville; Locks and Dam 26 and accompanying channel works along our inland waterways and deepening of our vital coastal harbors. The industry and its large supporting cast cannot help but cheer over this rebirth of our navigation system.

So flood control, navigation, water supply and generation of hydro-electric power and the many other beneficial uses of controlled water take on new dimensions in the Corps of Engineers F.Y. 1988 budget. We respectfully urge this Committee to approve this funding.

Before leaving the Corps budget, I would like to call this Committee's attention to an omission in that agency's budget. I refer to the local flood control project at Waterloo, Iowa, the subject of a resolution by Water Resources Congress which you will find attached to this statement. A joint venture between the City of Waterloo and the Corps of Engineers, the project needs bridge replacements to insure its flood free operation. The bridge work was authorized in Public Law 99-662 but it has been omitted in the budget. Waterloo having spent more than $20 million for its share of the project costs finds itself unable to meet the costs of the bridge replacements without federal help. We urge that the necessary funds be included in your appropriations bill to complete this project.

Turning now to the Fiscal Year 1988 budget of the Bureau of Reclamation, we find a confusing and alarming picture of western water development.

We have no quarrel with the total dollars programmed, but we are very concerned over the funding picture, or lack thereof, for several projects in the Western states.

A resolution addressing these funding inequities unanimously adopted by the Board of Directors of Water Resources Congress is attached to this statement. But I would like to mention two projects caught-up in this budget, which if enacted into law will store more projects than it will store water for western consumption.

Last year you may recall the WRC chairman lamented the treatment being accorded to the Garrison Diversion Project in North Dakota. He described Garrison as the battered child of the Pick-Sloan marriage. Now with funding proposed at $2½ million, the abused offspring of the Missouri River Basin development, appears to be abandoned. The proposed funding wouldn't even pay for the mothballs in which to store the project.

The Department of the Interior advises its budget resources are being directed to completing projects substantially underway. On the other hand, according to the Agency, funding is being limited or postponed for some projects in the early stages of construction,

By no stretch of the imagination can Garrison be classified as being in the early stages of anything unless it's the early stage of old age. This project has been around since the passage of the Flood Control Act of 1944.

Another of our senior projects is the Narrows Unit in Colorado, a studied, restudied project with three authorization years - 1944, 1945 and 1970. For starters the Narrows Unit needs $500,000 to implement the wildlife-endangered species management plan - a three state and federal agency venture.

Garrison, near the top of the Missouri River Basin, but at the bottom of the funding picture, and the Narrows Unit, where the total volume of words has surpassed the estimated volume of earth in the embankment, are called to your attention with our respectful request for funds.

Once again, it has been an honor for Water Resources Congress to have had this opportunity to appear before your Subcommittee. You have done water resources development a great service and, just as important, you have restored the confidence of water interests everywhere in this most noteworthy program.

Thank you very much.

RESOLUTION

WHEREAS, for eighty-five years, the Bureau of Reclamation has carried on the principal governmental program of developing and conserving major water resources in the 17 Western states; and

WHEREAS, these states have historically and do now need such water development and conservation programs for the maintenance of their economics, the welfare of their citizens, and to provide for population and economic growth; and

WHEREAS, the 17 Western states have historically supported the total Reclamation Program of the Bureau of Reclamation and the funding of all approved projects in all of the states; and

WHEREAS, the proposed Bureau of Reclamation fiscal year budget for 1988 would, if carried out, provide zero budgets for some projects, radically reduce the budgets to require the mothballing of facilities in others, and concentrate almost all of the Fiscal Year 1988 appropriations in a few projects; and

WHEREAS, such action "on a penny-wise and pound-foolish" basis would destroy the capacity to again commence construction of the projects on a timely basis through the loss of project staffs, inability to develop the necessary planning and engineering, failure to acquire needed lands, and loss of state and local governmental investment and infrastructure required to assist in the development and operation of the projects; and

WHEREAS, the discriminatory policies demonstrated in Fiscal Year 1988 budget allocations is, in many instances, contrary to commitments to the states, contracts with state instrumentalities, and specific acts of the Congress authorizing and directing the construction of the projects; and

WHEREAS, the budget policy appears to be designed to divide the 17 Western states in their support of Reclamation projects, frustrate the construction of partially completed projects, and prevent the commencement of construction of other Congressionally authorized projects; and

WHEREAS, the budget and its policy, if allowed to stand, will mean the end of the Reclamation Development Program, reduction of the Bureau of Reclamation to a minor operations and maintenance agency, and cause serious hardships to the states that are dependent upon water development and conservation for their economic and social being;

NOW, THEREFORE, BE IT RESOLVED by the Water Resources Congress that it urges the Congress of the United States to amend the budget of the Bureau of Reclamation to provide an equitable and practical distribution of appropriations among the authorized Reclamation projects in accordance with commitments and contracts of the Federal Government and existing laws of the Congress; and

BE IT FURTHER RESOLVED that the Congress direct the Bureau of Reclamation to continue the planning progress in an orderly manner and appropriate sufficient funds toward that end; and

BE IT FURTHER RESOLVED that Water Resources Congress urges each state, through its members in the Congress, to unite in the support of the above recommended changes in the budget of the Bureau of Reclamation for Fiscal Year 1988.

Dated this 5th day of February, 1987.

PREPARED STATEMENT

Senator DeConcini. I would like to insert in the record at this point the prepared statement of Harry Cook, president of the National Waterways Conference. Without objection, that statement will be made part of the record.

[The statement follows:]

STATEMENT OF HARRY N. COOK, PRESIDENT, NATIONAL WATERWAYS CONFERENCE, INC.

My name is Harry N. Cook, and I am President of the National Waterways Conference, Inc. Founded in 1960, the Conference is a nationwide organization of some 400 waterway-related businesses, industries and agencies joined together for the purpose of promoting a better understanding of the public value of water resources management, port and harbor, and water transportation programs and showing their importance to U.S. economic, social and environmental well being.

We commend you, Mr. Chairman, and the members of your Subcommittee for your strong support of sound and far-sighted water resources development projects over the years. The funds provided in your Energy and Water Development Appropriations Acts have helped to build America's infrastructure, provide the economic underpinning for much of our agricultural and industrial productivity, and create a better life for millions upon millions of our citizens. The foresight and wisdom of this Subcommittee has paid substantive dividends in terms of national economic development.

Cost sharing. This year, for the first time, non-Federal interests will be contributing substantial additional sums toward the cost of navigation and flood control projects. Starting on Wednesday, waterway shippers must pay ad valorem fees to use deep-draft channels and harbors, thereby accumulating funds amounting to 30-40% of the cost of maintaining navigable depths. Non-Federal sponsors of new deep-draft access channels and flood control projects have this year begun putting up a portion of construction costs in addition to the traditional lands, easements and rights-of-way. And the President's budget request now pending before this Subcommittee recommends the initial $38 million appropriations from the Inland Waterways Trust Fund to begin a policy of shallow-draft waterway users providing one-half of the cost of future lock-and-dam construction.

Cost sharing is now a reality for water resources projects. It was the "price" which waterway proponents had to pay for the authorization of new projects, ending years of debate and stalemate. But, as a result, we now have a true Federal/non-Federal partnership in the construction of new waterway, port and flood control projects and in the maintenance of deep-draft channels. No longer can such developments be regarded as Federal projects. Indeed, the Federal government now has financial partners who have a substantial stake in on-going projects.

It is important, Mr. Chairman, that the Subcommittee give priority to port and flood control projects for which Local Cooperation Agreements have been negotiated and inland navigation projects which are to be funded from the Inland Waterway Trust Fund. Non-Federal financing of such projects involves a good faith commitment and often a financial sacrifice on the part of non-Federal sponsors to comply with the cost-sharing stipulations of the Water Resources Development Act of 1986 (Public Law 99-662) and the Inland Waterways Revenue Act of 1978 (Public Law 95-502). And we hope that the Administration and the Congress enter into this new era of water project financing with the same commitment to live up to the Federal side of the bargain.

National interest. It is disturbing to note that the Administration has declined to fund so-called slack-water harbor improvements even when sponsors have indicated a willingness to comply with new cost-sharing requirements. According to a directive issued on May 23, 1986, Federal support "is not warranted and shall not be recommended when (1) resale or lease of lands used for disposal of excavated channel material can recover the cost of the improvements or (2) the acquisition of land outside the navigation servitude is necessary for construction of the improvements and would permit local interests to control access to the project." The assumption is that such projects would open up additional waterfront areas for industrial development and that local interests would be able to sell or lease sites or charge for their access, producing enough revenue to finance the project cost.

After the directive was issued, however, port projects at Scott City, Missouri, and Little Rock, Arkansas, were allowed to proceed, but the Board of Engineers for Rivers and Harbors rejected a proposed port project at Pine Bluff, Arkansas. Other port projects at Helena, Arkansas; Vicksburg and Greenville, Mississippi, and Memphis, Tennessee, were authorized in the Water Resources Development Act of 1986. The question at issue seems to be whether such projects are primarily port/navigation improvements or land enhancement/economic development projects. Whether cost-shared investment in slack-water harbors is in the national interest — and whether Federal support is warranted — is a public policy matter which properly should be decided by the Congress.

Discount rate. Section 80(c) of the Water Resources Development Act of 1974 (Public Law 93-251) states that the interest/discount rate formula used in "plan formulation and evaluation for discounting future benefits and computing costs" of Federal water and related land resources projects shall be the formula set forth in the Policies, Standards and Procedures approved by the President on May 15, 1962, and published as Senate Document 97 on May 29, 1962, as amended by the U.S. Water Resources Council and published in the Federal Register on December 24, 1968. This formula provides that the interest/discount rate is to be based on the average yield during the preceding year on interest-bearing marketable securities of the United States which, at the time the computation is made, have terms of 15 years or more to maturity.

The rate, fixed annually, cannot change by more than 1/4% per year. It was set at 5-5/8% in 1974 and it is now 8-7/8%. The yield of long-term, interest-bearing, marketable U.S. securities is now ranging downward. In February, for instance, the U.S. Treasury reported that the yield for such securities was only 7-1/4%. It appears likely, therefore, that the "official" interest/discount rate used in evaluating waterway projects will decline to 8-5/8% next October 1. However, it should be noted that the Administration is using a much higher discount rate in evaluating its new starts. In his statement to this Subcommittee earlier this year, Mr. Robert K. Dawson, Assistant Secretary of the Army (Civil Works), stated:

> "In evaluating the economic worth of a project, the benefit/cost ratio was computed based on the average market yield for outstanding, comparatively long-term obligations of the U.S. Treasury. For the FY 1988 new starts, the discount rate was 8-7/8%. However, the projects we have recommended as new construction starts have a higher rate of return. The benefits of the selected projects exceed their costs, exclusive of recreational considerations, based on a 10% rate of return, the yield which can be realized from alternative investments in the private sector. ***"

In other words, the Administration is using what is often referred to as an "opportunity rate" in evaluating the economic feasibility of new projects. Theoretically, this is the rate of return which private capital could realize if invested in hamburger stands, tanning salons or the stock market. As the Subcommittee will doubtless recall, the Congress has on several occasions repudiated the use of the "opportunity cost" approach in evaluating water projects — most recently in rejecting President Carter's "hit list." The use of a high-level discount rate unfairly discriminates against navigation projects which have initial excess capacity (so as to accommodate traffic growth) and benefits which build up over the years.

Privatization. In its recent report on "Reducing the Deficit: Spending and Revenue Options," the Congressional Budget Office (C.B.O.) suggested that Congress consider transferring control over both the financing and spending for several water transportation-related programs to non-Federal interests. Specifically, C.B.O. said the inland waterway system might be transferred "to a private corporation, which would be responsible for operating, maintaining, planning, constructing and financing locks and dams." Also, C.B.O. would require "local contracting for and financing of some ocean and port services," including the operation and maintenance of aids to navigation and dredging and maintenance of channels and harbors. C.B.O. characterized its proposal as a "revenue option," which apparently does not carry quite the weight of a recommendation but it is still alarming.

Waterway projects serve numerous public policy objectives. Since 1824, Congress has recognized the importance of water resources programs as measures for achieving broad economic and social goals. Development of inland navigation, for instance, has been a mainstay of farm income, industrial productivity, and general economic advancement. Port and harbor programs have contributed to U.S. exports, employment and national defense. These and other broad public benefits accruing to this and future generations could be jeopardized under privatization. The result would be subversive to public values. Commercial aspects would take precedent.

We do not believe that America is ready for the commercialization of its water transportation infrastructure, and we urge your Subcommittee to resist any move in this direction. We do not object to the sale of other transportation resources, including railroads. However, we would point out that with the recent sale of Conrail the Federal government wrote off more than $7 billion in Conrail subsidies — drastically changing the modal subsidy comparions which C.B.O. has published in recent years.

Conclusion. It is a pleasure to appear before your Subcommittee, Mr. Chairman, on behalf of the National Waterways Conference, Inc. — the first year in which our organization has requested time to be heard. We express our appreciation to the Subcommittee for its long-time, enlightened support of water resources development, and we urge you to continue to fund these programs in a timely and efficient manner, particularly now that non-Federal sponsors are substantially involved.

In a very real sense, the civil works program has been — and remains — a program of outstanding civil achievement. The Subcommittee has played a vital role in managing water resources for the benefit of the American people. In the future, as more and more funding comes from the non-Federal sector, your role will become even more important. Thank you for your courtesy in scheduling our testimony.

RESOLUTION

WHEREAS, The Water Resources Development Act of 1986 (P.L. 99-662) included authorization for two bridge replacements for the Waterloo, Iowa local flood protection project at a cost of $2.2 million. These bridges are the last items remaining to complete the joint effort of the Corps of Engineers and the City of Waterloo, and

WHEREAS, The Corps of Engineers has spent approximately $42 million and the City of Waterloo an additional $20.5 million to date, and

WHEREAS, The City, without federal help, will be unable to meet the obligation to replace the bridges, which if not replaced will restrict the waterway causing flood waters to overtop the dikes.

NOW, THEREFORE, BE IT RESOLVED That a federal/non-federal investment of more than $63 million for protection of Waterloo, Iowa from flooding by the Cedar River and Black Hawk Creek cannot be jeopardized by flooding through the "backdoor" by Blowers Creek.

BE IT FURTHER RESOLVED THAT Water Resources Congress respectfully requests that Congress include appropriations for the two bridges involved in the Fiscal Year 1988 Appropriations Bill.

Dated this 5th day of February 1987

HELENA HARBOR, ARK.

STATEMENT OF ERNEST CUNNINGHAM, SPEAKER OF THE ARKANSAS HOUSE OF REPRESENTATIVES

ACCOMPANIED BY ROBERT McGINNIS, ARKANSAS STATE REPRESENTATIVE

Senator DECONCINI. Our next witness will be Mr. Ernest Cunningham, Speaker of the House of Representatives in Arkansas, who is going to speak on the Helena Port Arkansas project.

Mr Speaker, we welcome you here. Your full statement, which I have before me, will appear in the record as if read. If you would please summarize that for us.

Mr. CUNNINGHAM. Thank you, Mr. Chairman. I also have with me my colleague, Representative Bob McGinnis from Marianna, Ark.

Senator DECONCINI. Mr. McGinnis, we are very delighted to have you here at the committee today.

Mr. MCGINNIS. I feel the same.

Mr. CUNNINGHAM. We appreciate this opportunity to speak to you on an issue of the utmost concern to us in our district and in our state.

Arkansas, like most of middle America, is in a recession. Parts of our state are even in what I would consider a very severe depression. Unemployment is very high particularly along the Mississippi River in both Arkansas and Mississippi.

In February, my county alone had over 20 percent unemployment rate. The neighboring counties were very much the same. Our area, the delta region of the state, is blessed with some of the most productive farmland in the world, but agriculture, as you know, is suffering. Our primary crops are cotton, soybean, rice, and wheat. However, we are producing so much of these crops that we cannot sell them at a profit.

We are optimistic, however, that agriculture will come back as public and private trade policies are adjusted to meet the needs of the farmer and our country.

ECONOMIC CHANGES

Many sectors of our economy are undergoing immense changes, and in terms of agriculture, we cannot expect these changes to greatly increase or even equal the number of people once employed in this area. We must accept these changes and develop new jobs for the people of eastern Arkansas.

This proposed slackwater port at Helena would be the impetus for job creation in the delta of Arkansas and Mississippi for years to come. Not only would this harbor develop the real potential for the creation of jobs in such areas as manufacturing, trade, and processing, but it would also be a boon to the agricultural economy of our region, providing an important link between our rich farmlands and the many markets around the world.

Our town, Helena, became an incorporated city in 1835 and, because of the Mississippi River, has had a small port there since its earliest days. The Mississippi River has been both a giver of life to Helena and a threat to its very existence. It offers a close and vital source of transportation and over the millenia built the rich farmlands of the delta.

Yet, even during my lifetime, the Mississippi River represented an ominous force of destruction with its floods. Through the assistance of our federal government, a comprehensive system of levees has given my people the ability to control the forces of nature.

Though we have tried our best to control the forces of the economy, we have been unsuccessful, because many of these were beyond our reach and the recession now portends the destruction of my hometown.

For the last several years, we have faced one economic crisis after another in our area. We have had several plants that closed due to foreign competition and have lost more than 1,000 manufacturing jobs in our county over the past few years.

We need the slackwater port to provide a location for industries that need to expand and need the Mississippi River to haul their goods.

As the federal government once stepped in to help us build levees and protect our cities from the floods, we ask your assistance to protect us, in this case, from a devastating economic cycle and allow us to continue to control our own destiny.

PRIVATE FUNDS INSUFFICIENT

The administration's posture in this case is that the port can be built with private funds. I only wish this was true. We had a young man from Little Rock who attempted over 3 years to put a private development package in place. He spent many dollars of his and his investors money. Although he thought he could succeed, he could not. His fate was not without precedent. Several other private developers assumed the task and all confronted the same, classic dilemma: No industry will agree to locate until they see the port actually being developed, and no investor will be willing to build the port until they have an industrial tenant there.

Senator DECONCINI. Mr. Speaker, could I ask you to summarize the balance of your statement, only because of our time constraints.

Mr. CUNNINGHAM. We are asking you for your assistance in this project, and hope that you will give it careful consideration. We feel that we face a crisis in Arkansas today. We must create jobs for our people and we have turned to you to ask you to help us, sir.

Senator DECONCINI. Mr. Speaker, this is a good project and I know a little bit about it through your two fine Senators, Senator Bumpers and Senator Pryor.

As you know, it was authorized through the omnibus bill last year and I think it is important that we have the foresight and commitment to move ahead. The problem is money, as you know. You probably know as well as I do where you squeeze it, but we will carefully review this in the committee, I can assure you.

I can assure you that Senator Bumpers and Senator Pryor are not letting us forget about the need for this project, and we thank you Mr.

Speaker for traveling so far to bring this to our attention. Your testimony and your appearance here makes a great impression with me as it does with your colleagues.

Mr. CUNNINGHAM. Thank you sir, I appreciate it.

[The statement follows:]

STATEMENT OF ERNEST CUNNINGHAM, SPEAKER, ARKANSAS HOUSE OF REPRESENTATIVES

SUMMARY OF REQUEST:	To appropriate $56,403,000 for construction of a slackwater harbor on the Mississippi River at Helena, Phillips County, Arkansas, as part of a $269,190,000 public works project authorized by Congress for construction of 10 shallow draft harbor and navigation projects in the United States.
POSITION OF WITNESS:	Requests subcommittee approval of the appropriation to develop Helena Harbor project, to be supplemented with local financing, as a means of creating manufacturing, processing and distribution centers to serve eastern Arkansas and western Mississippi by taking advantage of transportation activity along the Mississippi River. Economic success of Helena Harbor project would greatly benefit depressed economic areas in the region, promote the agricultural economy and enhance the economic outlook of middle America.

Thank you, Mr. Chairman and members of the Subcommittee on Energy and Water Development, for this opportunity to speak to you on an issue of utmost concern to my community and my state.

Arkansas, like most of middle America, is in a recession, and parts of our state are in what I and others consider to be a true depression. Unemployment is very high along the Mississippi River in both Arkansas and Mississippi. In February, my county had an unemployment rate of 20 percent; the rates in neighboring counties were much the same.

Our area, in the Delta Region of our state, is blessed with some of the most productive farmland in the world, but agriculture is suffering economically in Arkansas as in most of the nation. Cotton, soy beans, rice and wheat are our primary crops, but we are producing so much of these crops that we cannot sell them at a profit.

We are optimistic, however, that agriculture will come back as public and private trade and farm policies are adjusted to meet the needs of our farmers and our country. Many sectors of our economy are under going immense change, and, in terms of agriculture, we cannot expect these changes to greatly increase or even equal the number of people once employed in this area. We must accept these changes and develop new jobs for the people of Eastern Arkansas.

This proposed slackwater industrial port at Helena could be the impetus for job creation in the delta of Arkansas and Mississippi for years to come. Not only would this harbor develop the real potential for the creation of jobs in such areas as manufacturing, trade and processing, but it also could be a boon to the agricultural economy of our region, providing an important link between our rich farmlands and the many markets around the world.

Helena became a town in 1835 and, because of the Mississippi River, has had a small port since its earliest days. Before its settlement by Europeans, the Helena area was home to the Quapaw Indians, who used the river for transportation.

The Mississippi River has been both a giver of life to Helena and a threat to its very existence. It offers a close and vital source of transportation and over the millenia built the rich farmlands of the Delta. Yet, even during my lifetime, the Mississippi River represented an ominous force of destruction with its floods.

Through the assistance of our federal government, a comprehensive system of levies has given my people the ability to control the forces of nature. Though we have tried our best to control the forces of the economy, we have been unsuccessful because many were beyond our reach, and the recession now portends destruction of my home town.

For the last several years, Helena has faced one economic crisis after another. We have had several plant closings due to foreign competition and have lost more than 1,000 manufacturing jobs in our county over the past few years. We need the slackwater industrial port to provide a location for industries that need to expand and need the Mississippi River to move their goods.

As the federal government once stepped in to help us build levies and protect our city from the floods, we ask for your assistance to protect us in this case from a devastating economic cycle and allow us to control our own destiny.

The administration's posture in this case is that the port can be built with private funds. I only wish that was the case. We had a young man from Little Rock who attempted over three years to put a private development package in place. He spent many dollars of his and his investors. Although he thought he would succeed, he could not.

His fate was not without precedent. Several other private developers assumed the task, and all confronted the same, classic dilemma: No industry will agree to locate until they see the port actually being developed, and no investor is willing to build the port until they have an industrial tenant there.

Our request for your assistance on this project expresses much more than our very real, local concern. Our request conveys regional efforts to build the heartland of America and see it through these repressive economic times.

We look to the regions of our country that are prospering at this time--the Eastern Seaboard and the Pacific Coast. There is no doubt that these success stories can be attributed, in part, to accessibility to water transportation. Shipping and commerce serve as foundations to the economic success of these regions.

While great technological advances in recent years have torn away the barriers and eliminated the distances that once impaired communications, we still depend on four primary sources--waterways, highways, railways and airways--for transportation. No computer chip or fiber optic line can facilitate the movement of goods from one area to another. We must continue to rely upon and build our present systems of transportation necessary for strong domestic and international trade.

I know that you realize the slackwater industrial ports have been very successful on the Mississippi River, and there is very little acreage left in any of these ports for development. For middle America to grow, so must its waterways.

Please give middle America a chance. Help us build our slackwater industrial port. We are willing to do our share by accepting cost-sharing provisions that have been written into the legislation. The state of Arkansas is committed to this project, Phillips County is committed to this project, and Helena is committed to this project. We have made arrangements with the Stephens Investment Firm of Little Rock and Prudential-Bache in New York to help with the local financing portion of this project.

We are willing and able to do our part, but for this project to be successful, we ask our government leaders to do their part as well.

I was somewhat amused to see that one of the President's priorities for the next decade is to build an airplane that can travel at 25 times the speed of sound and cover the distance from Washington to Tokyo in just two hours. Sometimes, those of us living in middle America wonder if the administration knows we exist. And the proposal for a hypersonic airplane seems to confirm those suspicions.

We question the priorities of putting someone on a plane and sending them to Tokyo in a few hours as opposed to building a harbor in middle America and putting hundreds of people to work for a lifetime.

It is obvious that everyone in the United States does not and cannot live in California and along the Pacific Coast or in New York and along the Atlantic Seaboard. Middle America needs your attention in order to survive.

Perhaps the greatest accomplishment of our federal government has been its ability to confront and solve real problems both at home and abroad. It has the flexibility to meet the needs of the people when other attempts might fail. In this sense it truly is a government of the people, by the people and for the people.

We face a crisis in Arkansas today. We must create jobs for our people. And we turn to you for the help that only you can provide.

UPPER MISSISSIPPI RIVER ENVIRONMENTAL MANAGEMENT PLAN

STATEMENT OF JACK DITMORE, CHAIRMAN, UPPER MISSISSIPPI RIVER BASIN ASSOCIATION

Senator DECONCINI. Our next speaker will be Mr. Jack Ditmore, chairman of the Upper Mississippi River Basin.

Mr. Ditmore, we welcome you here. Let me assure you that your full statement will appear in the record, and if you would summarize that for us, because of time constraints, we would appreciate it, sir.

Mr. DITMORE. Thank you, Mr. Chairman. Thank you for this opportunity to appear before the committee. For the record, my name is Jack Ditmore. I am the chairman of the Upper Mississippi River Basin Association and represent the state of Minnesota on that association. Joining me is Holly Stoerker, the executive director of the UMRBA, whom you met earlier.

The Upper Mississippi River Basin Association strongly supports the Upper Mississippi River System Environmental Management Plan authorized in Public Law 99-662. While we appreciate the administration's support for this critical initiative in this fiscal year 1988 budget request, UMRBA supports an appropriation of $10 million for the EMP. The administration recommendation is under $4.2 million, or only about 25 percent of the authorization for fiscal year 1988.

The Upper Mississippi River Basin Association is an organization established by the agreement of Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The association was created to continue the cooperative action among the five states to address issues of common concern in respect to the Mississippi River and its major tributaries.

The association's predecessor commission was the author of the congressionally authorized master plan for the management of the upper Mississippi River system. The master plan is the basis for the environmental management plan which we support today. The association firmly believes that additional efforts beyond the administration's recommendation is not only possible, but is absolutely essential, if the environmental management program is to achieve its objectives.

While the policy of the state of Missouri does not allow for support of a request which exceeds an administration proposal, it is the collective judgement of the association that a $10 million appropriation for fiscal year 1988 is both reasonable and responsible.

Section 1103 of Public Law 99–662 authorizes over $16.7 million for the first year of the EMP program. The association recognizes the need for budget restraint and it is not proposing the appropriation of the full authorization in fiscal year 1988. However, we believe there are both policy reasons and resource needs which demand an appropriation in excess of the administration's recommendation.

The policy reason is very straightforward. The authorized funding does not carry forward to future years or otherwise remain available. Appropriations necessary to make a substantial beginning on the five primary components of the EMP must become available now to avoid problems down the road.

There are five elements to the EMP which you are very familiar with. These EMP elements are closely linked in importance. For example, the emphasis on monitoring will allow resource managers to select the most effective habitat projects and to evaluate their effectiveness.

The appropriation of $10 million, which is supported by the association, would enable the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the states to proceed as partners—and I emphasize "partners"—to fulfill major responsibilities under the authorized program.

About $4.2 million would be used for construction of habitat rehabilitation projects. This number is based on the states collective assessment of project readiness and the state willingness to proceed with the projects. The authorized appropriation is $8 million, however, the administration's recommendation is only $2.5 million.

Additional work totaling $1 million would be done on engineering and design for habitat projects for construction in future years. Preconstruction work is essential to complete the authorized program.

Nearly $4.4 million would be devoted to the long-term resource monitoring efforts. Monitoring efforts must be advanced to allow the monitoring program to serve as a truly useful tool in developing and evaluating habitat projects. Further the monitoring effort must be functional prior to 1992 when the second lock at Alton, Ill., is completed.

Approximately $400,000 of the requested amount would be directed to the design and construction of recreation projects and to assess the economic impact of recreation development. The administration has indicated that as a matter of national policy it does not intend to pursue recreation projects.

We oppose this policy. We believe it is inconsistent with the multipurpose management approach embodied in the congressional master plan for the river. Funds should be appropriated for recreation projects. To ensure that a recreational component is included in the EMP, the Corps of Engineers must receive an expression of congressional intent.

We believe the statutory guidance will be necessary. We urge that you include language in the appropriation bill which provides such guidance. We have included suggested language in our written statement. The states of the upper Mississippi River basin are deeply committed to the implementation of the management program.

Each state has signed a letter of assurance of their intent to cooperate and cost-share with the federal government. We believe the $10 million which we have requested today is both justified and essential. We urge your support for this level of funding.

On behalf of my colleagues in Illinois, Iowa, Missouri, and Wisconsin, thank you, Mr. Chairman, and I would try to answer any questions that you might have.

Senator DECONCINI. Mr. Ditmore, regarding the $10 million you refer to in your statement, is none of that included in what the administration is asking for? Is this all additional money?

Mr. DITMORE. Mr. Chairman, the administration has recommended $4.2 million; the additional increment would be $5.8 million.

Senator DECONCINI. So, $5.8 million on top of $4.2 million, for a total of $10 million.

Mr. DITMORE. That is correct.

Senator DECONCINI. Thank you. I just wanted to be sure. I have no questions, sir. Thank you very much.

[The statement follows:]

STATEMENT OF THE UPPER MISSISSIPPI RIVER BASIN ASSOCIATION

The Upper Mississippi River Basin Association, established by the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, serves its member states' needs for dialogue and cooperative action on water resources issues of common concern. The Association's predecessor Commission was the author of the Congressionally authorized "Comprehensive Master Plan for the Management of the Upper Mississippi River System" which, when submitted to Congress in 1982, set in motion what has come to be known as the Environmental Management Program for the Upper Mississippi River System (UMRS-EMP). The Association now serves as the regional forum for the implementation of that program.

The Upper Mississippi River Basin Association strongly supports the inclusion of $10 million for the UMRS Environmental Management Program in the FY 1988 Energy and Water Development Appropriations bill. Though the Administration has requested $4.168 million for this program, the Association firmly believes that additional effort is not only possible but absolutely essential if the program is to attain its objectives.

Section 1103 of P.L. 99-662 authorizes over $16 million for the UMRS Environmental Management Program for the first year of this ten year effort. While the Association is not proposing appropriation of the full authorized amount in FY 1988, it is imperative that program funding begin to approach the authorized level of effort as early in the program as possible. This is not only critical to the success of the program, but is also fundamentally important because authorized funding does not carry forward to future years or otherwise remain available until expended.

The UMRS Environmental Management Program authorized by Section 1103 of P.L. 99-662 consists of five primary components:

- habitat enhancement and rehabilitation projects
- long-term resource monitoring
- recreation projects
- recreation economics study
- traffic monitoring.

The major emphasis of the program and the major portion of available funding is directed toward the projects to rehabilitate and enhance backwater habitats and the long-term resource monitoring effort. These two program elements are inextricably linked. The monitoring program will not only track the environmental health of the river system, but will also enable resource managers to help select habitat projects and to evaluate their effectiveness.

The multi-purpose management approach for the river system supported by the Association includes both the improvement of the system's commercial navigation features, including a second lock at Lock and Dam 26, and enhancement of the system's environmental and recreational values. Completion of the second chamber over the next four years will require a significant federal investment. It is imperative that federal investment in the environmental and recreational components of the system keep pace with this development if the Congressional commitment to multi-purpose management is to be maintained.

Appropriation of $10 million for the UMRS Environmental Management Program would enable the Corps of Engineers, U.S. Fish and Wildlife Service, and the States as partners in this cooperative effort to fulfill a number of their responsibilities under the authorized program:

1) Based on the States' collective assessment of project readiness, additional important habitat rehabilitation projects would proceed to construction utilizing approximately $4.2 million. While Congress authorized appropriations in P.L. 99-662 of over $8 million in the first fiscal year for this program element, the Administration has currently programmed only $2.5 million.

2) Additional work totalling $1 million would be done on the engineering and design of habitat projects for construction in future years. If the program is to ever approach the level of effort authorized in P.L. 99-662, it is essential that pre-construction design work for individual projects be undertaken, particularly in the early stages of this 10-year effort.

3) Nearly $4.4 million of effort would be devoted to long-term resource monitoring. Funds currently included for this program in the Administration's budget are insufficient to advance the monitoring effort to the point that it can serve as a truly useful tool in tracking the environment and measuring improvements resulting from habitat projects. It is also critical that the monitoring effort be fully functional prior to 1992 when the second lock at Lock and Dam 26 is completed so that the effects of increased traffic levels can be properly evaluated. Additional funds would be used to initiate physical and biological monitoring and systemic identification and analysis of problems relating to the impacts of navigation and other human and natural activities.

4) Approximately $400,000 would be directed toward the design and construction of recreation projects and the conduct of an assessment of the economic impact of recreation development. The Administration's budget request includes no funds whatsoever for recreation. In fact, the Administration has indicated that as a matter of national policy it does not intend to pursue any recreation project efforts, even if they are cost-shared. This policy is inconsistent with the multi-purpose management approach embodied in the Master Plan which was approved by Congress as a guide for future water policy on the Upper Mississippi River System.

To insure that the recreational component of this multi-purpose program is preserved, the Corps of Engineers must receive a clear expression of Congressional intent. In addition to reinstating funds for recreational development within the appropriations for the UMRS Environmental Management Program, it will be necessary for Congress to direct that a portion of those funds be expended on recreational development. The Upper Mississippi River Basin Association believes that statutory guidance is the only avenue available to redirect current Administration policy with regard to recreational development. It is therefore the Association's recommendation that the FY 1988 Energy and Water Development Appropriations Bill include language as follows:

> "Within these funds, the Secretary of the Army is directed to initiate the design and construction of cost-shared recreation projects and the assessment of the economic impacts of recreational development as part of the UMRS Environmental Management Program."

The States of the Upper Mississippi River Basin are deeply committed to the implementation of the UMRS Environmental Management Program. The Governors, or Governor's representative, of each of the five states have signed letters of assurance as an expression of their intent to cooperate and cost-share with the federal government. In addition, many of the individual projects undertaken under the authority of this program will require the execution of binding local cooperation agreements. The states are prepared and eager to assume their responsibilities.

The states as partners in this program are dedicated to its success. As such, a deliberate effort has been made to realistically and responsibly define the potential scope of the work effort in FY 1988. It is the Association's firm belief that substantial progress can be made toward the protection, rehabilitation, and development of the unique resources of the Upper Mississippi River System if $10 million is committed to this effort in FY 1988. Because this funding level exceeds the President's budget request, the State of Missouri does not support this proposal. However, the collective judgment of the other cooperating states, in consultation with the federal participants, leads us to promote this funding level with the confidence that it can and must be done if this program is to be a success. We recognize that this may be viewed as an ambitious task, but we believe it is a prudent approach.

The Upper Mississippi River Basin Association and its member states are confident that the UMRS-EMP partnership that has been established with the Corps of Engineers and the U.S. Fish and Wildlife Service is a strong and viable one. Congressional commitment to this program is a wise investment and one which the Association urges be made.

ADDITIONAL PREPARED STATEMENTS

Senator DECONCINI. We have received a letter from the state of Missouri regarding this same program which will be incorporated in the record at this point, along with a statement from the state of Illinois.

[The information follows:]

STATEMENT OF MISSOURI DEPARTMENT OF NATURAL RESOURCES

Dear Senator Johnston:

The State of Missouri, a voting member of the Upper Mississippi River Basin Association, supports the $4.1 million as recommended in the President's budget for funding the Environmental Management Program in FY 1988. We voted in opposition to the funding request for an increase to $10 million as included in the Association's statement, attached. The Association will present this statement before the Senate Appropriations Energy and Water Development Subcommittee on March 31.

We support the coordinated development and enhancement of the Upper Mississippi River system. Your ongoing support is greatly appreciated and we look to the future with enthusiasm for implementing a well balanced river system.

STATEMENT OF GOV. JAMES R. THOMPSON OF ILLINOIS

Attached please find copies of the State of Illinois' proposed project list for the FY 88 budget of the Corps of Engineers. I ask your consideration of and favorable action on this request.

The attached list identifies the Corps of Engineers projects of highest priority to the State of Illinois. Five state agencies reviewed these projects and found them worthwhile based on need, cost, local sponsorship and Corps' interest. The list includes both items in the President's FY 88 budget request and others that we propose for special consideration.

I recommend inclusion of all these projects in the FY 88 Energy and Water Development Appropriations Act. Should you require any supporting documentation for these projects or other information, please do not hesitate to contact my Washington office (202/624-7760). Please include this correspondence in the hearing record of the Subcommittee.

The State of Illinois supports the following projects which are contained in the President's fiscal 1988 budget.

SURVEYS

Alexander and Pulaski Counties	$ 250,000
Chicago - South End of Lake Michigan	400,000
Des Plaines River	550,000
Illinois River between Henry and Naples	300,000
Illinois Shore Erosion	143,000

PRECONSTRUCTION ENGINEERING & DESIGN

Locks and Dams 52 and 53	1,500,000
Loves Park	350,000
O'Hare Reservoir (CUP)	400,000

CONSTRUCTION

Brandon Road Lock and Dam	1,914,000
Kaskaskia Island D&LD	2,100,000
Lock and Dam 26 (R)	75,000,000
Lock and Dam 26 - Second Lock	4,000,000
Mauvaise Terre D & LD	419,000
North Branch Chicago River	2,000,000
Rockford	544,000
Smithland Locks and Dam	342,000
South Quincy L & DD	2,500,000
Upper Mississippi River Environmental Management Program	4,168,000

OPERATIONS AND MAINTENANCE

Illinois supports the Corps' budget request for continued adequate maintenance and operation of navigation and flood control projects in and bordering the State.

In addition to the projects in the President's budget for which we have indicated support, the State of Illinois also has additional needs and priorities which are listed below.

Section 706 of the Water Resources Development Act of 1986 authorizes $3,000,000 for studies of the Great Lakes water levels, erosion, and shoreline protection. We request that $500,000 be appropriated now to initiate these studies.

Section 1104 of the Water Resources Development Act of 1986 increased the funding authority for the Illinois and Mississippi Canal to $15,000,000. We request an additional $2,000,000 in the Operations and Maintenance account. Completion of Aqueducts 4, 5, and 6 will require $1,000,000 and $1,000,000 is needed to continue rehabilitation on the east end.

Section 1142 of the Water Resources Development Act of 1986 authorizes $250,000 annually for measurement and accounting of Lake Michigan Diversion. The State of Illinois requests funding for this item.

Title XII of the Water Resources Development Act of 1986 gives appropriation authority to the Department of the Army of $16,000,000 for each of the next five years for the enhancement of dam safety efforts. The authority includes the following:

$13,000,000	for matching funds for state dam safety programs
$ 500,000	for training of state inspectors
$ 2,000,000	for dam safety research
$ 500,000	for dam safety inventory.

The State of Illinois strongly urges full funding of this authority.

We also request additional funding for the Illinois Shoreline Erosion Study. The Final Report covering the reach from Wilmette to Waukegan requires $550,000 this year.

For Preconstruction Engineering and Design of the St. Louis Harbor project, we request $1,200,000.

Illinois urges the funding of the Preconstruction Engineering and Design phase of the shore protection authorized for Illinois Beach State Park in the amount of $250,000. The extreme high lake levels of Lake Michigan require a degree of urgency to protect this important resource of the State. The park has in excess of 2 million visitors per year. In addition to its many recreational features, the park contains the first designated nature preserve in Illinois which high lake levels and erosion threaten.

The Upper Mississippi River Environmental Management Program needs $2,885,000 to initiate the Long-Term Resource Monitoring Phase. Also, program management and traffic monitoring require an additional $150,000; the recreation economics study needs $297,000; engineering and design of projects requires $805,000; and construction of habitat improvement projects needs $1,695,000.

The Des Plaines River Wetlands Demonstration Project requires $200,000 for hydraulic evaluation and $2,000,000 for implementation.

NEBRASKA WATER RESOURCE PROJECTS

STATEMENT OF HON. J. JAMES EXON, U.S. SENATOR FROM NEBRASKA

INTRODUCTION OF WITNESSES

Senator DECONCINI. We are now going to have the distinguished Senator from Nebraska, Senator Exon, will be here.

Senator Exon, would you care to introduce the members from your State who are with you today.

Senator EXON. I am delighted, Mr. Chairman, thank you very much. I would like the Nebraska witnesses to please come up to the witness table and I will be happy to introduce them at this time.

Senator DECONCINI. They have been very diligent, Senator Exon. They have sat through all kinds of water projects, including one dealing with Arizona, where we expounded for about 30 minutes, so we want to compliment them for their patience, and we welcome them here. We will let you proceed.

Senator EXON. Thank you very much. I appreciate their patience. The timing couldn't have been better for me. I just had to leave the subcommittee that I chair over at Armed Services, but there was an appropriate place to break. So I came over here and we timed this pretty well.

Mr. Chairman, I just want to highly recommend the great Nebraskans that are here to testify today, because water is critically important in Nebraska as it is in your state. The testimony that you are going to receive today will be from three people, according to the list that I have, and I know all of them very well, and I highly recommend them.

First, would be Mike Jess, who is here on the behalf the Governor of the state of Nebraska. Mike Jess is the director of water resources for the state of Nebraska. He was there as a deputy director of the state resources of the Water Department while I served as Governor of that state. I have known of his outstanding abilities and contributions that he has made to some very difficult problems in Nebraska over the years. I will not cite those, except to say that he is an expert on these things and I think that you will find his testimony informative and helpful, I am sure, to the decisions that this subcommittee is going to have to make.

Also, we have Ms. Gayle Malmquist testifying for the Papio National Resources District and the city of Omaha, Department of Public Works. Ms. Malmquist has been active in these affairs for a long, long time and the Papio District is one that we have worked with as long as I can remember—far before I served as Governor of that state.

It was at one time a real terror. We have begun to tame it, but there are still many very important projects that must go forward less the investment we have made over the years in taming the Papio much of it is going to go to waste. So the testimony that they will give will be particularly important.

Also, Dale Wahlgren, president of the Platte River Flood Control Association this year, and he also represents the NRD in that area and the Platte River Flood Control Association.

Once again, these are all excellent Nebraskans that have done a very, very great job, and I am delighted to welcome them here to the committee. Thank you very much.

Senator DECONCINI. Senator Exon, we are very pleased you are here. It does, indeed, weigh well for the projects here.

PREPARED STATEMENT OF SENATOR KARNES

Now, Senator Karnes has submitted a statement for inclusion in the record. So, without objection, it will be included at this point.

[The statement follows:]

STATEMENT OF SENATOR KARNES OF NEBRASKA

MR. CHAIRMAN, I APPRECIATE THIS OPPORTUNITY TO EXPRESS MY SUPPORT FOR CONTINUED FUNDING FOR THE PRAIRIE BEND UNIT WATER RESOURCES PROJECT WHICH IS LOCATED IN DAWSON, BUFFALO, AND HALL COUNTIES IN NEBRASKA. I WAS UNABLE TO PROVIDE COMMENTS DURING YOUR OFFICIAL HEARING AND I APOLOGIZE FOR ANY INCONVENIENCE THIS DELAY MAY HAVE PRESENTED. LET ME SAY THAT I LOOK FORWARD WITH GREAT ANTICIPATION TO WORKING WITH THE DISTINGUISHED MEMBERS OF THE COMMITTEE ON THIS AND OTHER MATTERS IMPORTANT TO MY STATE.

THE PRAIRIE BEND UNIT WATER RESOURCES PROJECT LIES WITHIN THE JURISDICTION OF NEBRASKA'S CENTRAL PLATTE NATURAL RESOURCES DISTRICT (CENTRAL PLATTE). SINCE THE PROJECT'S INCEPTION, CENTRAL PLATTE HAS ACTIVELY WORKED WITH PARTIES, AFFECTED BY AND CONCERNED WITH THE INITIATIVE, TO DEVELOP A COMPREHENSIVE PLAN WHICH WILL MEET THE MANY NEEDS OF THE REGION. THESE WOULD INCLUDE DEVELOPING SOURCES OF IRRIGATION WATER, DRINKING WATER, WATER FOR WILDLIFE, FISH AND WATERFOUL USAGE AND FLOOD PROTECTION, WHICH CAN BE ECONOMICALLY CRIPPLING.

OTHER MEMBERS OF THE NEBRASKA DELEGATION HAVE WORKED TIRELESSLY THROUGHOUT THE PAST SEVERAL YEARS TO SEE THE PRAIRIE BEND EFFORT CONTINUED. IN THAT CONNECTION, YOUR SUBCOMMITTEE HAS, SINCE 1983, SUPPORTED FUNDING FOR A FEASIBILITY STUDY OF THE PROJECT AREA BY THE U.S. BUREAU OF RECLAMATION. TO ASSIST IN THE SUCCESSFUL COMPLETION OF THE FEASIBILITY STUDY, CENTRAL PLATTE HAS PROVIDED SUBSTANTIAL SERVICES AND FINANCIAL CONTRIBUTIONS.

The particular support provided by Central Platte consists not only of a $240,000 cash grant to the Bureau, but also a variety of in-kind services which include assisting with water quality studies; helping with the development of a ground water model; and independently contracting various studies and investigations on engineering alternatives, financing options and hydrologic and water resource evaluations. As a result of this extensive assistance, it is likely the U.S. Bureau of Reclamation will complete the feasibility study this Fall, at which time advanced planning may commence.

Some have argued against proceeding with planning funds based on the supposition that the federal government ultimately may not fund construction of the project. Mr. Chairman, I do not believe this is a legitimate argument. I am unconvinced the American people are prepared to say the time has come to bring all future water development to a halt because some believe we have adequate services today. We must view projects such as this with a broad perspective and with concern for the future when water supplies and crop production capacity may not be as great.

We must realize the significance of the need to complete the feasibility study and the advanced planning function. Effective water resources management and development can only be accomplished by effective planning and evaluation. This is what Central Platte wishes to accomplish.

The Prairie Bend Unit Water Resources Project is a multi purpose plan which the other members of the Nebraska

CONGRESSIONAL DELEGATION AND I ARE CONFIDENT CAN DEVELOP INTO AN EFFECTIVE RESPONSE TO ALL OF THE AREA'S NEEDS AND CONCERNS. I AM HOPEFUL YOU WILL ACCEPT CENTRAL PLATTE'S REQUEST FOR THE INCLUSION OF $500,000 IN YOUR FY 1988 APPROPRIATIONS.

THANK YOU FOR YOUR TIME AND CONSIDERATION.

STATEMENT OF J. MICHAEL JESS, DIRECTOR, STATE OF NEBRASKA WATER RESOURCES

Senator DECONCINI. Mr. Jess, if you would proceed to summarize your statement, we would appreciate it due to time.

Mr. JESS. Thank you, Mr. Chairman.

Senator Exon, we thank you for making the arrangements you have made and, Mr. Chairman, for allowing us to testify before your committee.

I have distributed to your staff a copy of our written testimony and I will just highlight those for you in the interest of time today.

Governor Kay Orr would like to call your attention to several projects which are either on going or in need of initiation. The Farwell project is talked about first off. We are urging your support for needed drainage improvements in that particular area near St. Paul, Nebr.

The Loup River basin study is the next item. Our Nebraska sandhills have seen substantial development in recent times. This effort would go toward further investigations there to determine the extent of that development and what ramifications it might have on water supply and water quality.

In Nebraska, as well as most of the other High Plains states, we have encountered substantial ground water development. With that depletions in our water table, the ground water recharge demonstration projects, which were authorized by the Congress several years ago, would allow states such as Nebraska to develop technology for replenishing those supplies. That is an endeavor that not only would be beneficial in our state, where in some locations ground water is a sole source, but in other states of the great plains as well.

The Missouri River recreation project is one that was established by the Congress several years ago. It originated from severe bank erosion along the Missouri River downstream with the federal mainstem reservoir projects. You have seen fit to fund that from time to time.

We support continued funding, but also draw your attention to the provisions of Senate bill 403, introduced by the late Senator Zorinsky. There has been some confusion on the part of the federal agencies as to which agency is responsible for particular activities. That bill, we think, will go a considerable distance toward eliminating that confusion.

The North Loup project is one that is a little over half constructed. It is the largest project now underway in our state. The President has recommended to you the expenditure of about $19.5 million. We encourage you to support the project to that amount and also to consider an additional sum for the Davis Creek Dam and Reservoir, which is an integral part of the North Loup project, and the money to get underway with construction of the fish hatchery near Burwell.

The O'Neill unit, of course, is one that I am very familiar with. I have talked to your committee about it in the past. We urge you to commit the necessary funds for that study to allow the Bureau of Reclamation to go ahead with other feasibility studies and get the project underway.

The Papio project which Ms. Malmquist will talk about here shortly is another project that the Governor is supporting. It would allocate some $2.6 million for sites 18 and 20 in the Omaha vicinity. Those moneys would go toward both flight control and sanitation aspects at those sites.

You will also hear about the Platte River bank stabilization project from one of the other speakers this morning. We are supporting that, but would like to call your attention to the fact that these are intended to be demonstration projects and the local sponsors have encountered some reluctance, and seemingly confusion, on the part of the Corps of Engineers in attempting to pry benefit and cost analysis, which seems quite inappropriate for demonstration type projects. At any rate, we are supportive of the funding so that those may be continued.

We are requesting $500,000 for the Prairie Bend project. We are supportive of that. I believe that the Prairie Bend project, of course, would bring needed water supplies for not only irrigation, municipal needs, but also for habitat considerations in the central part of the Platte River basin.

Last, the South Platte and Frenchman planning effort, which is to bring needed water supplies to the area of eastern Colorado and western Nebraska, within the Frenchman River basin drainage, an area that has experienced substantial declines in water tables over the past several years. Seven districts in Nebraska and in Colorado have indicated a willingness to match the federal government on a 50/50 basis to investigate the possibility of diverting water from the South Platte River to those areas.

I have also outlined some other programs which I will simply allow you to read in the written materials that I have supplied, and yield the rest of the time to the other two speakers, Mr. Chairman.

[The statement follows:]

STATEMENT OF J. MICHAEL JESS, DIRECTOR OF WATER RESOURCES FOR NEBRASKA

Mr. Chairman and committee members, I am Michael Jess, Director of Water Resources for the State of Nebraska. My testimony is given on behalf of Kay A. Orr, Governor of Nebraska.

My purpose in appearing before you is to urge your support for several water resources projects needed in my state. If I may, I will simply list each with a brief explanation intended for clarification and to describe particular project features.

1. Farwell Unit (Bureau of Reclamation)

Construction of subsurface drainage facilities will enhance conservation of water and help to ease agricultural drainage and seepage problems near the town of St. Paul. The committee is urged to act favorably on the Farwell District's proposal to authorize payment for these improvements from Pick-Sloan federal revenues. Projected costs are $360,000.

2. Loup River Basin Study (Bureau of Reclamation)

The federal Loup River Basin study is an essential element of the joint state/federal effort to investigate water resources in the Nebraska sandhills region. Recent and expected future development potentially threatens both supply and the quality of water in the region. Federal cost outlays for next year are projected at $100,000; the state has already expended $1.3 million for the Sandhills area study.

3. Ground Water Recharge Demonstration Projects (Bureau of Reclamation)

Continued support is essential to assure adequate ground water supplies in regions experiencing a declining water table. In many areas of the Great Plains, including Nebraska, ground water is the sole source of supply. Reliable, cost-effective methods for replenishing those supplies are essential to continued vitality. Nebraska has recommended three demonstration projects. Although funding will not be needed in the next fiscal year, I want to remind committee members of the demonstration program and urge you to give it favorable consideration next year. Nebraska's three project sponsors have indicated a willingness to carry their share of expected demonstration costs.

4. Missouri River Recreational River (Corps of Engineers)

Since construction and operation of the Missouri River main stem dams, substantial bank erosion has resulted. Especially hard hit is the reach from Gavins Point Dam to Ponca. Construction of needed bank stabilization facilities is essential to halt the loss of valuable acres along the river. For next fiscal year, we urge appropriation of $100,000 for needed construction.

Beyond the need for funding is a need for clarification of federal responsibilities. Unclear authorities have created confusion between the Corps of Engineers and the National Park Service. In addition, conflicting criteria exists for federal and nonfederal cost-sharing arrangements. Proposed legislation introduced by the late Senator Zorinsky, S-403, would provide needed clarification. Your committee and the full body is urged to examine its provisions.

5. North Loup Project (Bureau of Reclamation)

Construction of the North Loup Project has passed the half-way point. The President has recommended expenditure of $19,470,000 for next fiscal year.

We concur in that recommendation. Additional funds ($1.5 million) also are needed to begin construction of the Davis Creek dam and reservoir. In detailed correspondence with members of the Committee, our state Game and Parks Commission has outlined its commitments as a nonfederal sponsor for the planned fish hatchery near Burwell. You are also urged to act favorably in funding the hatchery.

6. O'Neill Unit (Bureau of Reclamation)

The O'Neill alternative project is one I'm personally very familiar with. I have supported it since its inception. In my view, it is a superior means for providing needed irrigation, domestic and municipal supplies in north-central Nebraska. Legal and environmental impediments were minimized in its design, and when compared to the previous version, its total cost is approximately one half. The alternative project design has the Governor's support. I urge your support, continued evaluation and project planning activities. Nebraska officials have pledged approximately $150,000 of in-kind assistance. I recommend the committee appropriate $650,000 federal funding for next fiscal year's work.

7. Papillion (Papio) Creek Project (Corps of Engineers)

Some $2.6 million is needed next fiscal year for necessary work in conjunction with Sites 18 and 20. Among the items to be constructed are detention lagoons for containment of urban waste water upstream from Site 18. The project has broad, local support from officials of the City of Omaha, Douglas County and the Papio Natural Resources District. I urge your favorable action on this request.

8. Platte River Bank Demonstration Projects (Corps of Engineers)

The byword for this project is "demonstration". Beyond your support for appropriation of funds needed for completion of studies and plans and specifications, clear direction to the Corps of Engineers is urged. Because they are intended to demonstrate applications of experience gained elsewhere, customary benefit and cost analysis is not appropriate. Instead of full-scale projects, these are intended to demonstrate technological innovation.

To finish a cumulative assessment study of potential environmental impact, $75,000 is needed. An additional $100,000 is needed for development of plans and specifications needed for final designs and necessary land rights and easements. I urge your appropriation of these amounts.

9. Prairie Bend Project (Bureau of Reclamation)

Nebraska is in support of expending $500,000 next fiscal year for the Prairie Bend Project. The funding will allow completion of ongoing planning efforts and permit initial work on advanced planning. Work now nearing completion is essentially for dealing with long-term water supply problems. Among the proposed project features are facilities to address environmental concerns for endangered species and for other migrating bird populations. State and local support has been evident since initiation of the planning effort.

10. South Platte - Frenchman Planning Effort (Bureau of Reclamation)

To begin investigation of resource needs and potential water supplies, I urge your favorable consideration of the South Platte - Frenchman planning effort. Diminishing native water supplies in the Frenchman River basin leave many Nebraska and eastern Colorado farmers, ranchers and municipal suppliers with an uncertain future. Possible withdrawals from the South Platte River in

Colorado will be investigated. I urge your favorable consideration in appropriating $60,000 as a federal cost share. Together, nonfederal cooperators in the two states are committed to a 50:50 match of federal funds.

Finally, I want to direct your attention to three ongoing programs administered by the Corps of Engineers. The so-called Section 205 Small Project Flood Control program in the past, has not been sufficiently funded for needed work in such Nebraska communities as DeWitt, Howells and Verdigre. DeWitt especially, has been hard hit by flooding; the most recent was last week. The Section 14 Emergency Bank Protection program needs additional funding above this year's $12.5 million if much needed work near communities such as North Bend is to be finished.

The Section 22 Planning Assistance Program is intended to aid states in seeking solutions to water problems. Funding included in the Corps' overall budget and distributed internally to Districts provides technical assistance to the various states. Despite an average of $120,000 allocation per state, Nebraska is scheduled to again receive only $20,000 during FY 87. We request the Congress direct the Corps to allocate $100,000 for assistance in investigating and resolving problems of streambank erosion and environmental concerns along the Platte River. This will support the cooperative Federal, State and local Platte River streambank protection evaluation efforts.

Mr. Chairman, thank you for the opportunity to present Nebraska's testimony to your committee. Should questions arise today or later, I am available to answer them.

INTRODUCTION OF SUPPORTING WITNESSES

Senator EXON. Mr. Chairman, if I might insert something here. As I look up at the table after introductions, I see Kent Miller sitting there. I guess Kent is not going to testify today, because Mr. Wahlgren, who is the president of the Twin Platte area project, although Kent Miller has been there a long, long time as the general manager.

Then, out in the audience I noticed Mr. and Mrs. Milt Fricke, who have been leaders in the Papio area and the NRD's in that area for a long time, and also Steve Altman, these are all people who have made the Nebraska water projects tick in Nebraska.

I guess that we don't have time to listen to all of them today, but I wish we did, because there is an awful lot of knowledge there. I would only warn you, Mr. Chairman, if you start asking questions about this, they have all of the answers.

Senator DECONCINI. More than I want.

Senator EXON. We are glad to have all of you here.

Senator DECONCINI. Thank you, Senator Exon.

Senator EXON. If you would excuse me, I have to go to the Budget Committee, because if we don't get the right figure out of Budget, there isn't much that the chairman of this committee can do to fund these projects that we think are critically important.

Senator DECONCINI. Please go to the Budget Committee. We will miss you, Senator Exon, but you can do us a lot of benefit on the water project numbers that you are going to get us.

Ms. Malmquist, we will hear you now. If you would, please summarize your testimony in view of our time restraints.

PAPIO CREEK AND TRIBUTARIES, NEBRASKA

STATEMENT OF GAYLE MALMQUIST, CHAIRPERSON, PAPIO NATURAL RESOURCES DISTRICT

Ms. MALMQUIST. Thank you, Mr. Chairman.

I am Gayle Malmquist and I am the chairperson of the Papio Natural Resources District, which is headquartered in Omaha.

As chairman of the board, I would like to take this opportunity, on behalf of the board, to request continued support of the flood control projects on the Papillion Creek and its tributaries. This project is of vital interest not only to our district, the Papio Natural Resources District, but the city of Omaha and the countries that incorporate the district, which are Douglas, Sarpy, and Washington Counties in Nebraska.

The Papillion Creek and tributaries project has been ongoing for many years. We appreciate the support Congress has provided for the project in the past, but we ask the federal government for the continued funding for the project, so that we may finish it within the next 2 to 3 years.

We are in support of the administration's fiscal year 1988 budget proposals that are listed in the written testimony with one exception. The Corps of Engineers has indicated that an additional $1 million in ability is available for fiscal year 1988 on dam site 18, and we would strongly support the addition of that $1 million into the request.

In summary, we support a total allocation of $3.5 million in federal dollars in fiscal year 1988 for the Papio flood control projects. We emphasize that while it has been difficult with the new federal cost-sharing policy under H.R. 6, we want to assure the Congress that between the district, the city of Omaha, and other local entities that are involved in this in this project, agreements have been completed. We want the projects completed as agreed upon in recent years. We hope we can work with the Congress to get that accomplished.

Thank you.

Senator DECONCINI. Thank you, Ms. Malmquist, your statement is very precise and clear, and I want to compliment you for it, as is yours, Mr. Jess. These kind of statements are really helpful. We do know about these projects through the staff and having sat on the committee now for almost 11 years. Your statements underscore the importance, and how far along you are, particularly with the agreements by the local districts.

[The statement follows:]

STATEMENT OF GAYLE MALMQUIST, CHAIRPERSON, PAPIO NATURAL RESOURCES DISTRICT, NEBRASKA

The Papio Natural Resources District wishes to take this opportunity to request continued support for flood control projects on the Papillion Creek and tributaries flood control project. This project is of vital interest and concern to the district, the city of Omaha, and the counties of Douglas, Sarpy and Washington. The Papillion Creek and tributaries project has been ongoing for many years. We appreciate the support Congress has provided for the project in the past, and, we ask the federal government continue funding the project to its finish within the next 2 to 3 years.

We are in support of the administration's fiscal year 1988 budget proposals as follows with one exception. Since the Corps of Engineers has indicated additional $1 million ability for fiscal year 1988 on dam site 18, we strongly support that addition. Thus, we support and request fiscal year 1988 federal dollars for the Papio project as follows:

PAPIO PROJECT BUDGET

[In thousands of dollars]

Programmed	Dam site 20		Dam site 18			Channel	Total
	Rec.	Misc.	Rec.	Misc.	Lagoon		
FY 1988 (prog.)	1.0	0	1.45	0	[1]0.75	0.3	3.5

[1] 0.25 in local contribution by several local governmental units.

In summary, we support allocating $3.5 million federal dollars in fiscal year 1988 for the Papio flood control projects. Further, we emphasize that while it has been difficult with the new federal cost-sharing policy pursuant to H.R. 6 of October 17, 1986, we want to assure Congress that between the district, the city of Omaha, and other local entities arrangements and agreements have been completed to do so. We want this Papio project completed as agreed upon in recent years. We respectfully request your support and thank you for the opportunity to testify before you this day.

STATEMENT OF DALE L. WAHLGREN, PRESIDENT, PLATTE RIVER FLOOD CONTROL ASSOCIATION

Senator DeConcini. Mr. Wahlgren, we will put your statement in the record. If you would, please summarize it for us.

Mr. Wahlgren. Thank you, Mr. Chairman.

Mr. Chairman and members of the Energy and Water Development Subcommittee, I am Dale Wahlgren, a farmer along the Platte River and president of a volunteer organization called the Platte River Flood Control Association. Joining me is Kent Miller, general manager of the Twin Platte Natural Resources District. I will summarize both of our testimonies.

In 1984, funding was approved by this committee for a demonstration study and design under section 55 authority in a 46-mile reach of the Platte River in Lincoln County, Nebr. That study is now being finished by the Omaha District Corps of Engineers thanks to this committee's support.

The word "demonstration" was a key part of our presentation to this committee 3 years ago. Construction of this demonstration project would allow the federal, state, and/or local agencies and the landowners to observe, in place, alternative designs. They could then take home copies of the technical information of the alternatives of interest to them to use as a project to protect their river banks and reduce their damage.

In the erosion study done as a part of the study and design of this project, it has shown that there is a loss of an average of 206.6 acres of land to the river every year from 1976 to 1984 in that 46-mile stretch of the project. This translates into 10.91 acres per river mile per year.

There are two remaining steps before we can begin construction. The first step is to analyze the design in regard to the environmental impact. A cumulative assessment study of environmental impacts was initiated with the recent transfer of $125,000 of available Corps of Engineer funds previously allocated but not used for the technical assistance now completed. Additional funding for the Corps of Engineers of $75,000 in fiscal year 1988 will be needed to complete this assessment study.

The second step is the preparation of plans and specifications. Funding for the Corps of Engineers of $100,000 in fiscal year 1988 will be needed for the development of plans and specifications. Construction of this demonstration project is expected to be able to begin in fiscal year 1989.

On behalf of the Twin Platte Natural Resources District, the members of the Platte River Flood Control Association, and myself, as a farmer, are here to ask for your support of appropriations for this demonstration project. It would be an asset not only for Lincoln County but for the whole country as a demonstration of federal inputs, providing examples to solve river erosion problems.

I would like to thank the committee for giving of their valuable time to allow me to give testimony. We would be happy to answer any questions that you may have.

Senator DECONCINI. Thank you very much.

As you mentioned, in 1984, Congress did authorize and appropriate money. These demonstration projects are very important. We have had several in our state that have fallen in the category of small projects, and then we have several that have to be authorized, and it is a difficult situation to get them authorized and put into the budget.

Senator Exon has certainly made his state's interests known to this Senator and other members, as you have today. I can assure you that you have a very sympathetic committee here for such demonstration projects. The problem is that we have so many of them that it is trying to allocate them within the budget process.

The work that Senator Exon is engaged in right now—to get a number out of the Budget Committee—is probably more important than this hearing, taking nothing away from your fine statements. This is the problem that we are having.

I just want you to take that information with you, not to discourage you, because I am glad you are here and supporting the projects, and your statements are very good, and they will appear in the full record, and will have some influence, I am sure, on the committee.

Thank you.

Mr. WAHLGREN. Thank you, Mr. Chairman.

[The statements follow:]

STATEMENT OF DALE L. WAHLGREN, PRESIDENT, PLATTE RIVER FLOOD CONTROL ASSOCIATION, INC.

MR. CHAIRMAN, MEMBERS OF THE ENERGY AND WATER DEVELOPMENT SUBCOMMITTEE, I AM DALE WAHLGREN, PRESIDENT OF THE PLATTE RIVER FLOOD CONTROL ASSOCIATION. THE ASSOCIATION WAS FORMED IN 1984 IN RESPONSE TO MANY YEARS OF INCONSISTENT FLOWS, BANK EROSION, AND FLOODING ALONG THE PLATTE RIVER AND ITS TRIBUTARIES IN NEBRASKA. THE ASSOCIATION IS PRIMARILY A WATCHDOG ORGANIZATION TO MONITOR WATER FLOWS, WATER IMPOUNDING LEVELS AND RELEASES, AND LEGISLATION AFFECTING THE PLATTE RIVER IN NEBRASKA.

IN 1984, THE PLATTE RIVER FLOOD CONTROL ASSOCIATION ASKED THE TWIN PLATTE NATURAL RESOURCES DISTRICT TO WORK TOGETHER IN PURSUING LEGISLATION AND FUNDING FOR A BANK STABILIZATION PROJECT IN A REACH OF THE PLATTE RIVER. CONSEQUENTLY, FUNDING WAS APPROVED BY THIS COMMITTEE FOR A DEMONSTRATION STUDY AND DESIGN UNDER SECTION 55 ATHORITY IN A 46 MILE REACH OF THE PLATTE RIVER IN LINCOLN COUNTY NEBRASKA. THAT STUDY IS NOW BEING FINISHED BY THE OMAHA DISTRICT OF THE CORPS OF ENGINEERS.

THE WORD "DEMONSTRATION" WAS A KEY PART OF OUR PRESENTATION TO THIS COMMITTEE THREE YEARS AGO AND WE BELIEVE THE REACH OF THE PLATTE RIVER SELECTED FOR THIS PROJECT IS VERY REPRESENTATIVE OF MOST OF THE PLATTE RIVER BASIN AND THEREFORE METHODS OF BANK STABILIZATION USED HERE COULD BE EASILY ADAPTED TO OTHER SECTIONS OF THE RIVER. CHARACTERISTICS OF THIS SECTION THAT MAKE IT REPRESENTATIVE OF OTHER STRETCHES ARE: THE MERGING OF TWO MAJOR RIVERS, THE RIVERS RUNNING THROUGH THE FOURTH LARGEST CITY IN NEBRASKA, SOME OF NEBRASKA"S MOST PRODUCTIVE FARMLAND BORDERS THE RIVER, IT HAS THREE MAJOR IRRIGATION DIVERSIONS IN THE 46 MILE PROJECT, AND HAS MANY WILDLIFE HABITAT AREAS THAT ARE DESIRABLE TO PRESERVE. HENCE THE WORD "DEMONSTRATION" NEEDS ALSO TO BE PRESERVED IN DISCUSSING THE BENEFITS OF THIS PROJECT. IN WORKING WITH THE CORPS OF ENGINEERS, WE ASKED THEM TO KEEP THIS IN MIND WHEN RECOMMENDING BANK STABILIZATION METHODS. WE ASKED THEM TO PROPOSE NEW AND INNOVATIVE METHODS OF PRESERVING THE RIVER BANKS AND ALSO PRESERVING THE CHARACTER OF THE RIVER. WE FEEL THIS HAS BEEN ACCOMPLISHED IN THE DESIGN NOW BEING FINISHED.

I WOULD LIKE TO DWELL BRIEFLY ON WHY WE FEEL THIS PROJECT NEEDS TO BE FUNDED FOR CONSTRUCTION, BASED ON SOME OF THE FINDINGS IN THE DESIGN STUDY, AND COMMENTS FROM CORPS OF ENGINEER EXPERTS WORKING ON THE DESIGN. FIRST WE NEEDED TO LOOK AT THE EROSION RATES ON THE 46 MILE REACH. AS A FARMER, I AM WELL AWARE OF THE MONEY SPENT AND THE PRIORITY PUT ON REDUCING EROSION ON THE FARMLAND OF OUR COUNTRY. THE EROSION OF THE BANKS OF MANY OF OUR RIVERS AND STREAMS IS CONTRIBUTING TO MUCH OF THE SEDIMENT AND SOIL THAT MOVES DOWN OUR RIVERS AND IS LOST BY OUR FARMERS. I STOOD AND WATCHED ABOUT THREE ACRES OF MY FARM BEING CUT AWAY AND CARRIED DOWN STREAM BY THE FLOOD WATERS IN THE 1983 FLOOD IN THE LINCOLN COUNTY PROJECT AREA. NOT HAVING ANY POSSIBLE WAY OF STOPPING THE EROSION OF MY FARM AND OTHERS IN THE AREA, PROMPTED MYSELF AND MANY OTHER LANDOWNERS TO FORM AN ORGANIZATION TO PROVIDE A VEHICLE TO OBTAIN HELP. THIS TYPE OF EROSION OF OUR FARMLAND IS JUST AS CRITICAL AS

OTHER TYPES OF EROSION THAT CONGRESS PAYS MILLIONS OF DOLLARS TO STOP THROUGH VARIOUS FARM PROGRAM METHODS. IF WE LOOKED AT THE PROVISIONS OF THE 1985 FARM BILL, WE WOULD FIND STOPPING EROSION OF OUR FARMLAND AS A HIGH PRIORITY IN THE BILL, YET MANY OF THE FARMS ALONG THE RIVER HAVE LOST MORE TONNAGE OF SOIL TO THE RIVER THAN WOULD BE ALLOWED IN THE 1985 FARM BILL. THE PROBLEM IS THAT WE AS FARMERS DO NOT HAVE THE RESOURCES TO DEAL WITH THE PROBLEM.

IN THE EROSION STUDY DONE AS A PART OF THE STUDY AND DESIGN OF THIS PROJECT, IT IS SHOWN THAT THERE IS A LOSS OF AN AVERAGE OF 206.6 ACRES OF LAND TO THE RIVER EVERY YEAR FROM 1976 TO 1984 IN THE 46 MILE STRETCH OF THE PROJECT. THIS TRANSLATES INTO 10.91 ACRES PER RIVER MILE PER YEAR. THE CORPS OF ENGINEERS DETERMINED THAT THE REASONS FOR THE EROSION RATES OF THIS MAGNITUDE ARE: "IMPROPERLY USED OR PLACED EROSION PROTECTION STRUCTURES (I.E. LARGE SLABS OF CONCRETE), DEBRIS OBSTRUCTIONS, ECT. SAND PITS BUILT ADJACENT TO HIGH BANKS OF RIVER ARE CAPTURED BY RIVER AFTER PITS ARE ABANDONED. CLEARING OF TREES AND VEGETATION ALONG HIGH BANKS LEAVES RIVERBANKS NAKED AND EASILY ERODED. FLUCTUATING FLOWS (SEE FLOW CHART) WITH OCCASIONAL SPRING AND EARLY SUMMER FLOODING, GROUND WATER SEEPAGE, WIND WAVE WASH, HIGHLY ERODIBLE SOIL TYPES, SHEAR VELOCITY AND EDDY ACTIONS". MANY OF THE REASONS FOR EROSION MENTIONED BY THE CORP WERE OUTLINED IN MY TESTIMONY BEFORE THIS COMMITTEE IN 1984. CONSTRUCTION OF THIS PROJECT WOULD ELIMINATE MANY OF THESE EROSION PROBLEMS AND WOULD PROVIDE NECESSARY DATA FOR OTHER PROJECTS UP AND DOWN THE PLATTE RIVER AND MANY OTHER SIMILAR RIVERS ACROSS THE COUNTRY, BE IT LOCAL, STATE, OR FEDERAL. ANOTHER STATEMENT BY THE ENGINEERS APPLIES HERE "CAR BODIES AND OTHER JUNK CURRENTLY LITTER THE BANKS OF THE PLATTE RIVER SYSTEM IN AN ATTEMPT TO HALT EROSION. UNFORTUNATELY, SUCH MATERIALS ARE NOT ONLY UNSIGHTLY, BUT MOST HAVE PROVEN TO BE INEFFECTIVE AT STOPPING EROSION AND ARE NOT ENVIRONMENTALLY ACCEPTABLE". THE ONLY WAY THIS CAN BE STOPPED IS BY PLANNED AND ENGINEERED BANK STABILIZATION PROJECTS LIKE THIS ONE.

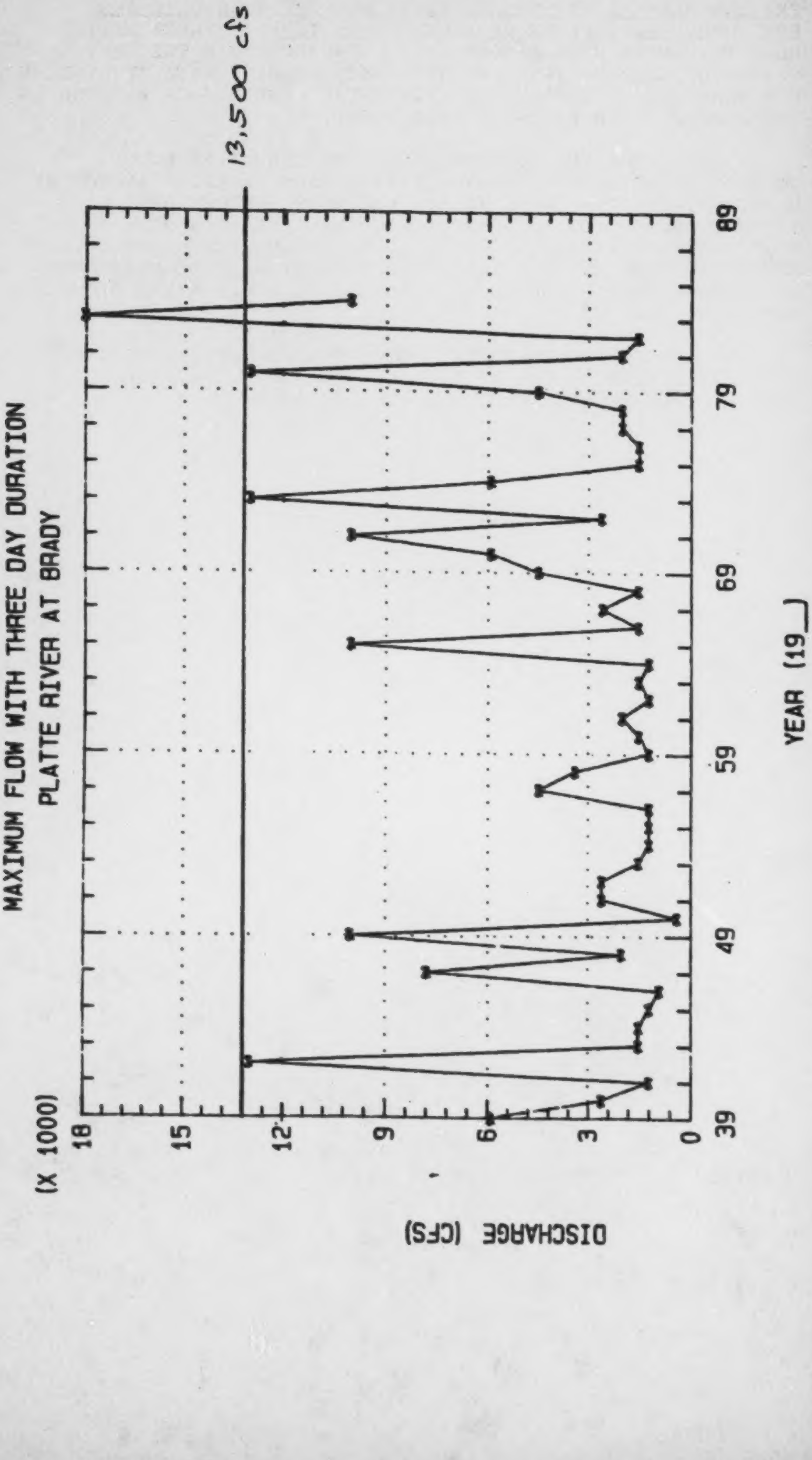
ECONOMIC FEASIBILITY IS ANOTHER ASPECT TO CONTEND WITH IN ASKING FOR CONSTRUCTION OF THE PROJECT. COST BENEFIT RATIOS ARE HARD TO ESTABLISH IN MANY OF THE RIVER EROSION CASES, AS IT IS IN MANY OTHER FARM EROSION SITUATIONS. THE FEDERAL GOVERNMENT DISPERSES MANY DOLLARS THROUGH FARM PROGRAMS TO PREVENT EROSION WITHOUT A MENTION OF COST BENEFIT FORMULAS. WE NEED THAT SAME CONSIDERATION IN ASKING FOR APPROPRIATION FOR THIS PROJECT.

AGAIN, A STATEMENT BY THE CORPS OF ENGINEERS, SHOWS THE NEED FOR THIS PROJECT FOR NOT ONLY PROTECTION OF OUR FARMLAND FROM EROSION, BUT FOR DEMONSTRATION AND STUDY PURPOSES TO ENHANCE OTHER SIMILAR PROJECTS. THE CORP STATED IN THE STUDY, "WHILE THE LOCALIZED EFFECTS OF BANK STABILIZATION STRUCTURES ON THE PLATTE RIVER ARE PREDICTABLE, IT IS DIFFICULT TO ASSESS THE CUMULATIVE IMPACTS OF A SERIES OF DIFFERING STRUCTURES. IMPACTS OF A PARTICULAR TYPE OF STRUCTURE VARY WITH PLACEMENT, LOCATION, LENGTH, MATERIAL TYPE, HEIGHT, ECT., AND THE EFFECTS OF ADJACENT STRUCTURES ARE OFTEN OFFSETTING. A PARTICULAR STRUCTURE MAY AFFECT THE RIVER ONLY UNDER CERTAIN FLOW CONDITIONS. IT IS VERY DIFFICULT AND OFTEN MISLEADING TO

PRESENT BLANKET STATEMENTS REGARDING THE HYDRAULIC AND ENVIRONMENTAL EFFECTS OF A STRUCTURE TYPE". WHERE BETTER ELSE TO CONSTRUCT A DEMONSTRATION PROJECT THAN THE VERY CENTER OF THE COUNTRY? WE NEED THIS PROJECT AS A STUDY BASE FOR WHAT CAN BE DONE TO ALLEVIATE THE PROBLEMS OF EROSION IN THE PLATTE RIVER BASIN AND ELSEWHERE.

ON BEHALF OF THE MEMBERS OF THE PLATTE RIVER FLOOD CONTROL ASSOCIATION AND MYSELF AS A FARM OPERATOR ALONG THE PLATTE RIVER, I AM HERE TO ASK FOR YOUR SUPPORT OF APPROPRIATIONS FOR THIS LINCOLN COUNTY NEBRASKA BANK STABILIZATION PROJECT. IT WOULD BE AN ASSET FOR NOT ONLY LINCOLN COUNTY BUT FOR THE WHOLE COUNTRY AS A DEMONSTRATION OF FEDERAL INPUTS PROVIDING EXAMPLES TO SOLVE RIVER EROSION PROBLEMS.

I WOULD LIKE TO THANK THE COMMITTEE FOR GIVING OF THEIR VALUABLE TIME TO ALLOW ME TO GIVE TESTIMONY. I WOULD BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE.


MAXIMUM FLOW WITH THREE DAY DURATION
PLATTE RIVER AT BRADY
13,500 cfs
DISCHARGE (CFS)
(X 1000)
18
15
12
9
6
3
0
39
49
59
69
79
89
YEAR (19__)

STATEMENT OF KENT O. MILLER, P.E., GENERAL MANAGER AND DISTRICT ENGINEER, TWIN PLATTE NATURAL RESOURCES DISTRICT

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, I AM KENT O. MILLER, GENERAL MANAGER AND DISTRICT ENGINEER FOR THE TWIN PLATTE NATURAL RESOURCES DISTRICT.

NEBRASKA'S 24 NATURAL RESOURCES DISTRICTS ARE LOCAL POLITICAL SUBDIVISIONS OF THE STATE OF NEBRASKA CREATED TO CONSERVE, PROTECT, DEVELOP AND MANAGE THE NATURAL RESOURCES OF THE STATE. DISTRICTS, WHICH WERE ESTABLISHED IN 1972, CONSOLIDATED THE FUNCTIONS PREVIOUSLY PERFORMED BY SOIL AND WATER CONSERVATION DISTRICTS AND WATERSHED CONSERVANCY DISTRICTS.

THE TWIN PLATTE NATURAL RESOURCES DISTRICT IS LOCATED IN WEST CENTRAL NEBRASKA WHERE THE NORTH PLATTE RIVER AND THE SOUTH PLATTE RIVER COME TOGETHER TO FORM THE PLATTE RIVER. (see attached map)

I AM TESTIFYING TODAY IN REGARD TO A STREAMBANK STABILIZATION "DEMONSTRATION PROJECT" ALONG THE PLATTE RIVER AND ITS TRIBUTARIES, THE NORTH PLATTE RIVER AND SOUTH PLATTE RIVER IN NEBRASKA. THE "DEMONSTRATION PROJECT" IS LOCATED IMMEDIATELY ABOVE AND BELOW THE CONFLUENCES OF THE NORTH PLATTE RIVER AND THE SOUTH PLATTE RIVER WITH THE PLATTE RIVER FOR A TOTAL COMBINED AND CONTIGUOUS PROJECT OF APPROXIMATELY 46 RIVER MILES. (see attached maps)

I PREVIOUSLY TESTIFIED BEFORE THIS COMMITTEE IN 1984 AND 1985 REQUESTING FUNDS BE ALLOCATED TO SECTION 55 OF PUBLIC LAW 93-251 AUTHORITY FOR U.S. ARMY CORPS OF ENGINEERS TECHNICAL ASSISTANCE TO DEVELOP STREAMBANK STABILIZATION MEASURES FOR THIS "DEMONSTRATION PROJECT". I AM PLEASED TO REPORT TO YOU THAT THE DESIGN OF MEASURES IS COMPLETED DUE TO THIS COMMITTEE'S SUPPORT OF FUNDING AND THE NEBRASKA CONGRESSIONAL DELEGATION PERSISTENCE WITH THE ADMINISTRATION.

THIS "DEMONSTRATION PROJECT" CONTINUES TO BE AN IDEAL DEMONSTRATION MODEL OF A TYPICAL REACH THAT WOULD BENEFIT THE ENTIRE BASIN FROM THE KNOWLEDGE GAINED. THE "DEMONSTRATION PROJECT" DESIGN CONSISTS OF 66 SITES AND UTILIZES 18 ALTERNATIVES USED EITHER IN DIFFERENT PARTS OF THE COUNTRY OR IN THE LABORATORY THAT WILL SHOW THEIR EFFECTIVENESS ON THE PLATTE RIVER SYSTEM. THIS REACH EXPERIENCES SEVERE STREAMBANK STABILIZATION PROBLEMS ANNUALLY AND WOULD THEREFORE PROVIDE IMMEDIATE BENEFITS FOR DEMONSTRATION AND STUDY. THE DESIGN OF MEASURES IS BY THE RIVER EXPERTS, THE U.S. ARMY CORPS OF ENGINEERS. CONSTRUCTION OF THIS DEMONSTRATION PROJECT WOULD ALLOW THE FEDERAL, STATE AND/OR LOCAL AGENCIES AND THE LANDOWNERS TO OBSERVE IN PLACE ALTERNATIVE DESIGNS. THEY COULD THEN TAKE HOME COPIES OF THE TECHNICAL INFORMATION OF THE ALTERNATIVES OF INTEREST TO THEM TO USE TO PROTECT THEIR RIVER BANKS AND REDUCE THEIR DAMAGE.

NOW THAT THE DESIGN IS COMPLETED, THERE ARE TWO REMAINING STEPS BEFORE WE CAN BEGIN CONSTRUCTION.

THE FIRST STEP IS TO ANALYZE THE DESIGN IN REGARD TO ENVIRONMENTAL IMPACTS. A CUMULATIVE ASSESSMENT STUDY OF ENVIRONMENTAL IMPACTS OF THIS PROPOSED PROJECT THROUGHOUT THE PLATTE RIVER BASIN IS, AS I AM SPEAKING TO YOU, BEGINNING. THIS ASSESSMENT STUDY WAS INITIATED WITH A RECENT TRANSFER OF $125,000 OF AVAILABLE U.S. ARMY CORPS OF ENGINEERS FUNDS PREVIOUSLY ALLOCATED BUT NOT USED FOR THE TECHNICAL ASSISTANCE NOW COMPLETED. ADDITIONAL FUNDING FOR THE U.S. ARMY CORPS OF ENGINEERS OF $75,000 IN FISCAL YEAR 1988 WILL BE NEEDED TO COMPLETE THIS ASSESSMENT STUDY.

THE DESIGN REPORT NOTES THAT STREAMBANK STABILIZATION PROTECTION PROJECTS CAN RESULT IN A RANGE OF POSITIVE AND ADVERSE ENVIRONMENTAL

EFFECTS AND THAT ADVERSE IMPACTS CAN BE MINIMIZED BY PROPER PLANNING, DESIGN, CONSTRUCTION, AND MAINTENANCE OF THE STREAMBANK PROTECTION STRUCTURES. WE HOPE AND BELIEVE THAT ENVIRONMENTAL INTEREST WILL SUPPORT AND WORK WITH THE CUMULATIVE ASSESSMENT STUDY OF ENVIRONMENTAL IMPACTS AND THE DEMONSTRATION ASPECTS OF THIS PROJECT.

THE SECOND STEP PRIOR TO CONSTRUCTION IS THE PREPARATION OF "PLANS AND SPECIFICATIONS" WHICH INCLUDES FINAL DESIGN AND THE IDENTIFICATION OF LAND RIGHTS AND EASEMENTS NEEDED FOR CONSTRUCTION. FUNDING FOR THE U.S. ARMY CORPS OF ENGINEERS OF $100,000 IN FISCAL YEAR 1988 WILL BE NEEDED FOR DEVELOPMENT OF "PLANS AND SPECIFICATIONS".

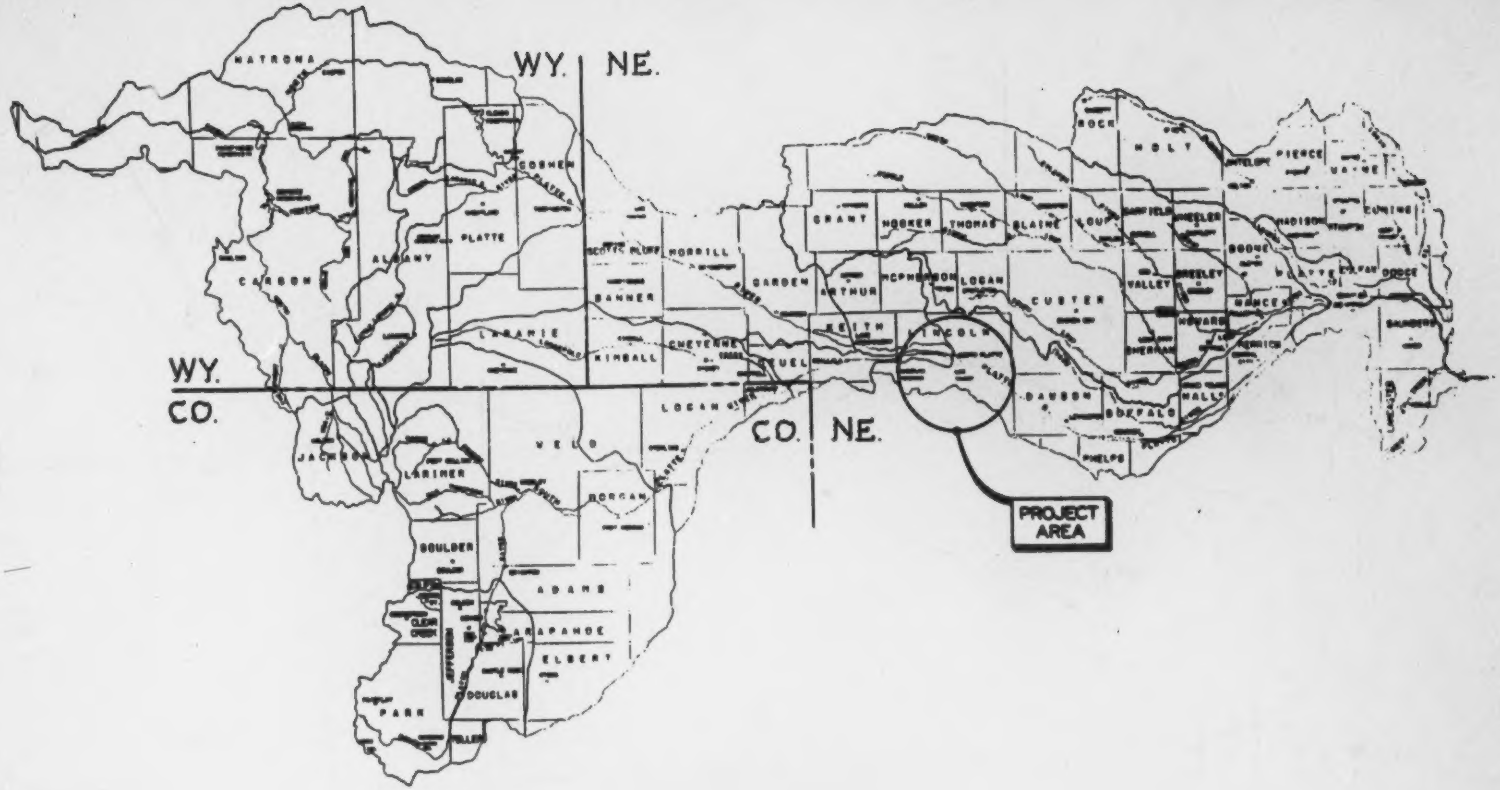
CONSTRUCTION OF THIS "DEMONSTRATION PROJECT" IS EXPECTED TO BE ABLE TO BEGIN IN FISCAL YEAR 1989. THE ESTIMATED TOTAL PROJECT COSTS FOR CONSTRUCTION, ENGINEERING AND DESIGN, SUPERVISION AND ADMINISTRATION AND MONITORING AND EVALUATION IS $5.4 MILLION. THIS DOES NOT INCLUDE LAND RIGHTS OR EASEMENTS.

THE PROJECT HAS GOOD LOCAL SUPPORT. ON APRIL 22, 1986 THE U.S. ARMY CORPS OF ENGINEERS DESIGN TEAM PARTICIPATED IN AN OPEN HOUSE IN NORTH PLATTE. THE OPEN HOUSE PROVIDED THE LANDOWNERS OF EACH PROPOSED SITE AN OPPORTUNITY TO MEET INDIVIDUALLY WITH THE DESIGN TEAM AND VIEW THE PRELIMINARY DESIGNS. SIXTY-THREE INDIVIDUALS CAME TO THE OPEN HOUSE ALL OF WHOM SUPPORTED THE PROJECT. EACH INDIVIDUAL HAD A MINIMUM OF AN HOUR WAIT FOR THEIR TURN AND NO ONE LEFT OR COMPLAINED.

I WANT TO THANK THE COMMITTEE FOR THE CONTINUING SUPPORT FOR THIS STREAMBANK STABILIZATION "DEMONSTRATION PROJECT".

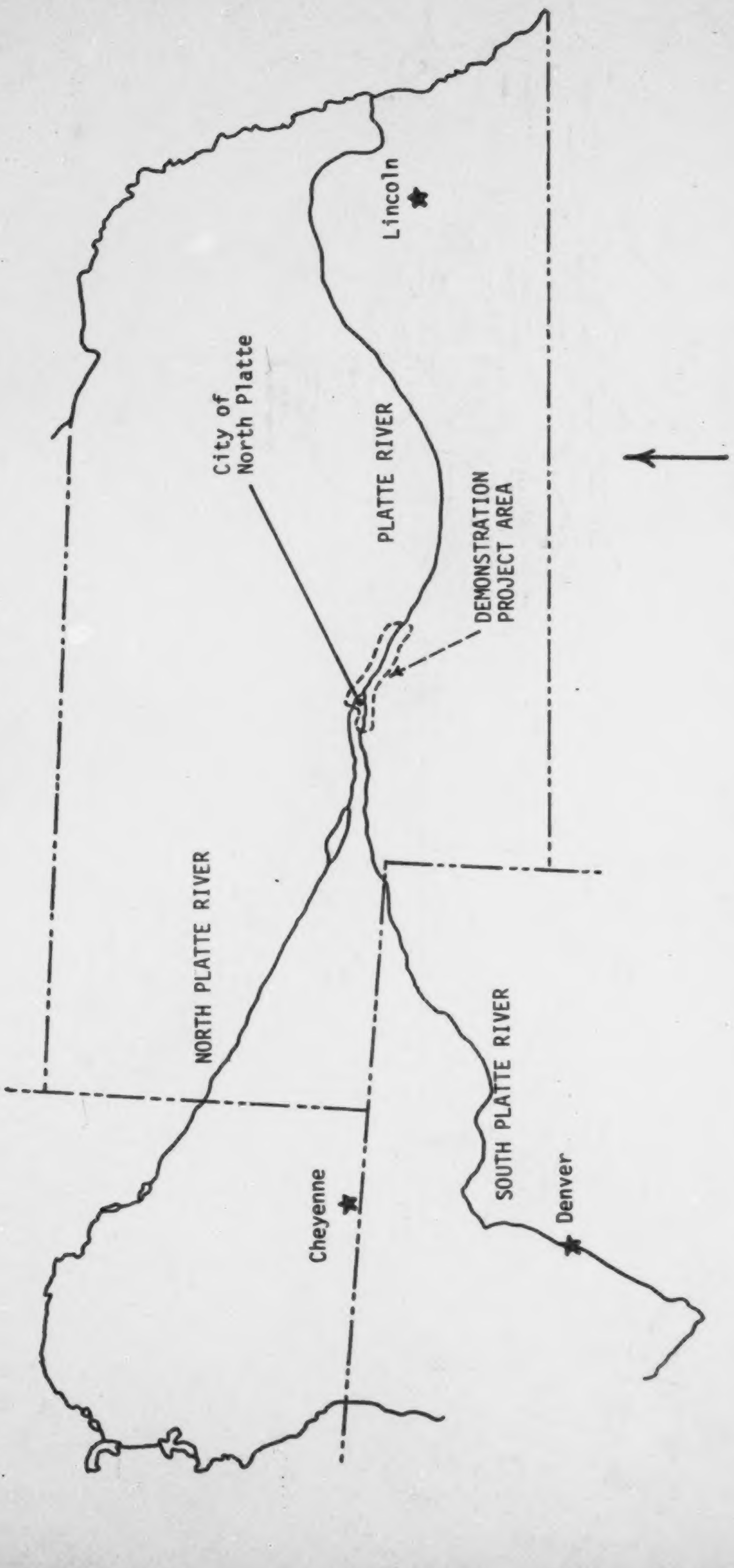
THANKS TO THIS COMMITTEE, WE HAVE A DESIGN COMPLETED, NOT JUST ANOTHER STUDY, AND SOON WE CAN HAVE DEMONSTRATIONS OF ALTERNATIVE MEASURES IN PLACE.

MY COMPANION, DALE WAHLGREN, WHO IS A FARMER ALONG THE PLATTE RIVER AND PRESIDENT OF THE PLATTE RIVER FLOOD CONTROL ASSOCIATION, WILL NOW CONTINUE OUR TESTIMONY. I WILL BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE AT THE CONCLUSION OF MR WAHLGREN'S REMARKS.


WY. NE.
WY. CO.
CO. NE.
NATRONA
CARBON
ALBANY
PLATTE
GOSHEN
JACKSON
LARIMER
WELD
MORGAN
LOGAN
BOULDER
ADAMS
ARAPAHOE
ELBERT
JEFFERSON
DOUGLAS
PARK
LARAMIE
SCOTTS BLUFF
MORRILL
BANNER
KIMBALL
CHEYENNE
DEUEL
GARDEN
ARTHUR
KEITH
MCPHERSON
LOGAN
LINCOLN
GRANT
HOOKER
THOMAS
BLAINE
CUSTER
LOUP
GARFIELD
WHEELER
VALLEY
GREELEY
SHERMAN
HOWARD
DAWSON
BUFFALO
PHELPS
HALL
MERRICK
NANCE
BOONE
ROCK
HOLT
ANTELOPE
PIERCE
WAYNE
MADISON
CUMING
PLATTE
COLFAX
DODGE
SAUNDERS
PROJECT AREA

PLATTE RIVER BASIN

SCALE IN MILES
24 0 24 48


Lincoln
City of North Platte
PLATTE RIVER
DEMONSTRATION PROJECT AREA
NORTH PLATTE RIVER
SOUTH PLATTE RIVER
Cheyenne
Denver

ADDITIONAL PREPARED STATEMENTS SUBMITTED FOR THE RECORD

Senator DECONCINI. The subcommittee has received several statements for the Missouri-Nebraska region of the country, which, without objection, will be placed in the record at this point.

[The statements follow:]

STATEMENT OF J.M. PETERSON, PRESIDENT, AND DARREL CURRY, VICE PRESIDENT, MISSOURI RIVER BANK STABILIZATION ASSOCIATION

Mr. Chairman and Members of the Sub-Committee:

We do, on behalf of the Missouri River Bank Stabilization Association, thank you for this opportunity to testify concerning the FY 1988 budget and its effect on the interests we represent. We also extend our thanks for according us similar opportunities in the past. As you likely know, we have appeared before your sub-committee on a number of occasions since 1973, and we certainly appreciate the interest and consideration you have always shown us. The funding we have received previously has provided a firm start for a project designed to preserve and protect a bit of the old — the "wild" Missouri.

We are here to request that the Missouri National Recreational Project, authorized in 1978 under Section 707 of Public Law 95-625, **be included for full federal funding in the 1988 budget.** At the time the project was authorized, the cost was $21,000,000.00, which was to be spent over a period of years. **For FY 1988, $1,000,000.00 is needed for construction together with $200,000.00 for operation and maintenance of the works already completed along this segment of the river** under Section 32 Streambank Erosion Control and Demonstration Act which ended in 1983.

This project involves a fifty-nine (59) mile segment of the Missouri River, which forms the boundary between South Dakota and Nebraska, between Gavins Point Dam, near Yankton, South Dakota and Ponca State Park, near Ponca, Nebraska. This is the only reach of the Missouri below the Gavins Point Dam which is not channelized or otherwise controlled. This is the sole surviving segment of the Big Muddy below Gavins Point Dam which is in more or less its natural condition. It is the only wild reach of river in the "old" valley which begins near Yankton, South Dakota. The "old" valley was not subjected to the most recent glaciation, so it is markedly wider than the "new" valley lying upstream of Yankton. In this the "old" valley, the Missouri is free to roam in a miles-wide floodplain. Here it meanders at will. Releases from Gavins Point Dam, which vary considerably, are governed by the need for flood control, navigation, drinking water supplies and hydro-electric power. These releases continue to ravage the sandy riverbanks, relentlessly attacking and destroying the river's corridor. This continued destruction is not, as it was in the past, offset by any "build-back" because the construction of the "main-stem" dams on the Missouri has eliminated flooding along this reach of the Missouri. Thus, streambank erosion continues unchecked while no flooding occurs to offset that erosion. To preserve this corridor in its natural state, steps need to be taken to equalize the natural processes. Only in this way can this reach of the "old" Missouri be preserved for the use and enjoyment of generations of Americans yet to come.

Continuation of the funding for this project will enable the Corps of Engineers to pursue its work to restrain the river and so preserve its natural character. A continuation of the funding will also protect the investment of some $6,000,000.00 in work already completed, work which is the base for additional work needed to preserve and protect this reach of the "wild" Missouri.

With respect to the general Congressional concern for some cost-sharing by local interests, we reiterate our earlier statements. We have no quarrel with the concept of cost-sharing as such, and are happy to be able to report to you that at least one project is now under construction near Vermillion, South Dakota, near river mile 787. **There, Clay County, South Dakota, is helping to construct a launching ramp and other facilities. Further, other governmental units in both South Dakota and Nebraska, have expressed a willingness to share in the funding of such projects. We do believe, however, that with reference to the work needed to restrain and contain the river, and thus preserve its character, the federal government should continue to bear the responsibility. This is, after all, a *national river*, so designated by Congress in an effort to preserve this bit of the "wild" Missouri.** As a project to be administered by the Department of Interior, federal funding is certainly appropriate and traditional. That consideration aside, the severe erosion problem along this reach of the river is the direct result of the elimination of flooding on this part of the river. The dams eliminated flooding, but also eliminated the build-back which accompanied the flooding. Thus, we have the flow, erratic and unpredictable, ceaselessly assaulting the shoreline, but never any offsetting restoration. As we have noted previously, equity and good conscience alone would dictate an assumption by the federal government of the cost of alleviating this problem.

Once again we thank you for the opportunity to appear before this sub-committee and for the consideration you have shown for those farmers, outdoorsmen, environmentalists, and others who make up the Missouri River Bank Stabilization Association.

We would be happy to try to answer any questions that you might have.

Thank you.

STATEMENT OF WILLIAM H. KLINGNER, PRESIDENT, UPPER MISSISSIPPI FLOOD CONTROL ASSOCIATION

SUMMARY AUTHORIZED PROJECTS

PROJECTS	EST.FED. COSTS	BUDGETED FY 88	REQUESTS	REMARKS
1. South Quincy Drainage & Levee District, IL (F.C.)	$7,590,000	$2,500,000	$2,500,000	See Discussion
2. Green Bay Levee & Drainage Dist. No. 2, Iowa (FDP)*	$5,180,000	0	0	See Discussion
3. Muscatine Island Levee & Drainage Dist. and Muscatine Louisa Co. Drainage District No. 13, Iowa (FDP)*	$10,500,000	$ 150,000	$ 150,000	To Complete C.P. & E. See Discussion

*(FDP) Flood Damage Prevention

The Upper Mississippi Flood Control Association wishes to thank your Honorable Committee for the part it played in including the three foregoing projects in the "Water Resources Development Act of 1986", P.L. 99-662. You may recall that our Association presented oral and written testimony on behalf of all three projects last year.

Our Association understands that projects authorized under P.L. 99-662 are only eligible for funding. The Act in itself does not appropriate construction money. Appropriations are provided for in separate fiscal year "Energy and Water Development Appropriation Bills". Projects which do not receive funding through appropriation bills within five years are to be automatically deauthorized.

We are confirming our testimony to our membership authorized projects. Our Association extends from Guttenberg, Iowa to Hamburg Bay, Illinois, some 350 miles along both sides of the Mississipi River, encompassing the major portion of the Flood Plain in the tri-state area of Missouri, Illinois and Iowa.

DISCUSSION OF AUTHORIZED PROJECTS

P.L. 99-662 IN ORDER OF SEQUENCE

1. South Quincy Drainage and Levee District.

   Completion Planning and Engineering funds (PC&E) were made available in FY 87 and all planning is essentially completed. All phases of the project have progressed very satisfactorily to date.

   As reported last year, the South Quincy Drainage and Levee District has agreed to the cost sharing provisions and has executed a "Memorandum of Understanding" with the State of Illinois and a Companion "Letter of Intent" with the Corps of Engineers, U.S. Army.

   The current estimated construction cost is $10,120,000 - of which cost sharing is estimated as follows:

   Federal Costs 75% = $7,590,000
   Non-Federal 25% = $2,530,000

   The State of Illinois through its Department of Transportation, Division of Water Resources is participating in the Sponsor's share of 25% of the construction cost.

   The District has secured the required Court Approval for entering into contract with the Federal and State Governments and the authority to spread an assessment on all lands within the Drainage District to pay for local costs.

   It is anticipated that an assessment roll can be prepared, filed and approved, all rights-of-ways acquired, and that initial construction contracts can be awarded by July or August 1987. This is a tight schedule but the District is confident that it can be accomplished. Our Association urges retention of the $2,500,000 for construction as set forth in the President's Budget for FY 88.

2. The Green Bay Levee and Drainage District No. 2, Iowa, Flood Control Project is dormant due to lack of Federal funding.

   As reported the past two years, the Project after running the gamut of approximately nine years of study, dredging demonstration projects, inter-State and Federal Agreements, a C.O.E. design study or Survey Report based upon a 200 year flood frequency protection was completed. The Board of Engineers of Rivers and Harbors during review recommended that the protection be increased to a 500 year flood frequency design.

The administration found that a 500 year design was not appropriate for Agriculture areas and questioned the proposed protection to the large Fertilizer Plant within the District. The Office of Management and Budget rendered an opinion that the Fertilizer Plant constitutes an industrial point source, which must comply with Federal Water Pollution Control laws, laws which require actual or probable industrial polluters to control pollutants at their own expense.

The Fertilizer Plant is strictly for the purpose of manufacturing agricultural fertilizer, nitrogen and phosphate and has its own protective dikes with zero discharge. The plant has evaporation pools of approximately 300 acres which evaporate all of the plant effluent. It could well be feasible for the plant to transport its fertilizer components and gypsum waste out of the flood plain.

It is our understanding that in the Corps of Engineers Cost-Benefit analysis, benefits were not taken for probable damages of chemical spills into the River due to a levee failure.

The Drainage District, has no serious objection to reverting back to the original design and cost basis of a 200 year frequency flood protection project, but agrees with the analysis of the Board of Engineers for Rivers and Harbors that a 500 year design is cost effective.

The "Water Resources Development Act of 1986, P.L. 99-662" authorizes the Green Bay Project. The Act, as you know, also provides for deauthorization of projects not receiving funding within five years of authorization. This, of course, becomes a major concern of our Association and the Green Bay District.

Our Association realizes that the Corps of Engineers has expressed no project capability at this time and that the project is not in accord with current administration policies. Nevertheless, in light of the tremendous amount of time, cost and study that has gone into this project, may we suggest that the Congress take a second look and re-open the study at its first opportunity. If not this year due to recognized budget restraints, then next year.

In short, we are not asking for $150,000 or any amount to initiate Continuing Planning and Engineering in FY 88 but we respectfully request that this project not be allowed to die due to lack of funding within the five year limitation period.

3. The Muscatine Island Levee and Drainage District and Muscatine Louisa County Drainage and Levee District No. 13, Iowa, is included in P.L. 99-662.

Here again, many years of planning and negotiation have gone into this project in an attempt to bring the project to the stage of appropriation. The Corps of Engineers has expressed a capability of $150,000 for FY 88 to complete Continuing Planning and Engineering. The sponsor has expressesd a willingness to participate in construction costs.

Our Association respectfully requests that your Honorable Committee support the $150,000 budgeted for FY 88.

As mentioned last year, our Association continues to have serious reservations over the justification of a change in flood control policy over the Upper Mississippi River involving the Navigation system at this time. The reason for this is that the Navigation system, including the Locks and Dams, levees and appurtenances are all a part of an integral system closely tied to human lives, recreation, the environment, and the economic vitality of the entire region. The projects authorized are merely upgrading the System. Some of our member Districts which will ultimately need upgrading, may not receive financial support from their respective states. States also have financial difficulties.

Our Association believes, as stated last year, that flood control on major rivers is a Federal responsibility and should be evaluated, designed and constructed on a regional basis having an overall objective, not on a project by project basis.

P. L. 99-662 is so comprehensive that it is difficult to determine its ramifications on the Upper Mississippi River. We note that Section 1103 authorizes construction of a second lock at LOCK AND DAM 26, Alton, Illinois. This is good, though we had hoped it would be a second 1200 foot lock. Section 1103 also authorizes environmental programs (UMRS-EMP). Our Association is hopeful that those administering (EMP) may be somewhat lenient in its interpretation and include river bank stabilization under its authority. One of our chief concerns has been river bank erosion which threatens our member District levees, and blocked gravity drains. Whose responsibility?

Thanks for the privilege of presenting this testimony.

UPPER MISSISSIPPI FLOOD CONTROL ASSOCIATION

REPRESENTING LEVEE AND DRAINAGE DISTRICTS BORDERING ON UPPER MISSISSIPPI RIVER IN ILLINOIS, IOWA AND MISSOURI

William H. Klingner, President, 617 Broadway, Quincy, Illinois

John Kinscherff, Vice President, Illinois
Nebo, Illinois 62355

Wm. J. Pieper, Vice President, Iowa
R.F.D., Wever, Iowa 52658

D. C. McConnell, Vice President, Missouri
Taylor, Missouri 63471

Greg Dolbeare, Secretary
New Canton, Illinois 62356

Matthew A. Hutmacher, Treasurer
428 N. 6th St., Quincy, Illinois 62301

Early in the Nineteen Fifties, individual Member Districts of our present Association began appearing before your Honorable Committee to urge the completion of the Upper Mississippi River Development proposed in the 1930's.

Each year, since our first appearance on May 15, 1953, you have granted us the honor and privilege of appearing before your Committee to present our views.

In 1954, sixteen of our present twenty-five member Districts which were included in the Flood Control Act of 1954, House Document No. 281, 83rd Congress, banded themselves together as the Upper Mississippi Flood Control Association.

Since that time our Association has been the official spokesman for all our member Districts in Missouri, Illinois and Iowa on both sides of the River extending from Guttenberg, Iowa to Hamburg Bay, Illinois.

The 1962 Flood Control Act authorized the Gregory Drainage District project; House Document No. 546, 87th Congress, Second Session. This Missouri District was admitted as a member of our Association on February 1967 and lies directly across the Mississippi River from the Hunt-Lima Lake Drainage Districts of Illinois.

Directly across the River from Hamburg Bay, Illinois and opposite the lower end of the Sny Island levee Drainage District, lies the Elsberry Drainage District, Lincoln and Pike Counties, Missouri. This District contains approximately 20,000 acres of rich agricultural lands protected by 24.4 miles of levees. These levees also protect the City of Elsberry and the surrounding area.

The Elsberry Drainage District Flood Protection Project was authorized in 1944 under House Document No. 669, 76th Congress, 3rd Session. Early in 1970 the Elsberry Drainage District became a member of our Association. The project has been placed on inactive status. The District withdrew from the Association in 1982.

The Mississippi Fox Drainage District #2 was admitted to membership in 1976. The Project Survey was authorized prior to 1965 under the authorized "Fox River, Iowa and Missouri Study".

The Sny Island Levee Drainage District Seepage Study was authorized under the Rivers and Harbors Act of 1937 and reauthorized under R. & H. Act of March 2, 1945. The Public Appropriations Act of 1973 (P.L. 92-405) provided funds for restudy.

The adjoining pictures were taken in the Fabius River Drainage District during the peak of the 1973 flood.

1. Industrial Area West Quincy, showing flooded Mississippi River.
2. Fabius River Drainage District flooded—City of Quincy, Illinois in background.
3. Quincy Memorial Bridge looking West into Missouri, U. S. Highway 24 closed on account of flood.
4. Motel completely under water from Mississippi River.

MEMBER DISTRICTS

1. Drury Drainage District—Illinois
2. Muscatine-Louisa County Drainage District No. 13—Iowa
3. Muscatine Island Levee District—Iowa
4. Muscatine City-Muscatine Island Flood Control Commission—Iowa
5. Sub-District No. 1 of Drainage Union No. 1—Illinois
6. Bay Island Drainage & Levee District No. 1—Illinois
7. Louisa-Des Moines County Drainage District No. 4—Iowa
8. Des Moines County Drainage District No. 7—Iowa
9. Des Moines County Drainage District No. 8—Iowa
10. Iowa River-Flint Creek Levee District No. 16—Iowa
11. Henderson County Drainage District No. 1—Illinois
12. Henderson County Drainage District No. 2—Illinois
13. Green Bay Levee & Drainage District No. 2—Iowa
14. Des Moines & Mississippi Levee District No. 1—Missouri
15. Hunt Drainage District—Illinois
16. Lima Lake Drainage District—Illinois
17. Indian Grave Drainage District—Illinois
18. Fabius River Drainage District—Missouri
19. Marion County Drainage District—Missouri
20. South Quincy Drainage & Levee District—Illinois
21. South River Drainage District—Missouri
22. Sny Island Levee Drainage District—Illinois
23. Gregory Drainage District—Missouri
24. Elsberry Drainage District—Missouri (withdrew 1982)
25. Mississippi-Fox Drainage District No. 2—Missouri

STATEMENT OF THE ASSOCIATION OF STATE FLOODPLAIN MANAGERS

The Association of State Floodplain Managers is the only national organization of state and local officials responsible for managing flood-prone areas. We represent the state and local agencies who work to reduce and prevent flood damages.

In an average year, floods kill 150 people and cost the country over $5 billion in property damages. Flood have been and continue to be a tremendous burden on the nation's taxpayers. The federal government alone spends over $1 billion each year in disaster assistance, subsidized flood insurance, and flood control projects. Fifty years of experience with federal floodplain programs have shown that the best way to prevent and reduce flood losses and to minimize federal expenditures is to have effective state and local programs.

There are two items in the FY 88 Corps of Engineers appropriations that deserve special attention because they are so important to state and local efforts. In both case, programs with a relatively small federal expenditure will result in very large federal savings through the prevention or reduction of damages and death due to floods and dam failures.

This paper provides background information on why we support:

1. The Administration's request for floodplain management services, and

2. Full funding of the dam safety programs that were authorized in the Water Resources Development Act of 1986.

1. Floodplain Management Services. The Corps of Engineers' floodplain management services staffs respond to requests for assistance from state and local officials and citizens. The Corps' floodplain management services is unique and most helpful to state and local programs. It can respond on short notice to day-to-day problems through a network of 50 District offices throughout the nation. Its skilled engineers and planners can provide the latest technical information on a variety of flood protection measures.

Currently the Corps responds to over 80,000 requests for assistance each year. Most requests are for information on a site's flood hazard and for guidance on how to best prevent or reduce flood damages to that site. Communities also request help in preparing flood warning, evacuation and flood hazard mitigation programs.

The benefits of this program greatly outweigh the costs. Fifteen minutes of technical advice to a property owner can result in measures that prevent thousands of dollars in flood damage. A day spent with a local official to develop better floodplain regulations or to critique a flood evacuation plan can result in hundreds of thousands of dollars in flood protection. The more property owners and local officials are helped and encouraged, the less they will need federal disaster assistance or a federally funded flood control project.

There is some concern that the Corps' floodplain management services may duplicate the floodplain management work by the Federal Emergency Management Agency (FEMA). This is not so. The FEMA program prepares base flood studies that take two to three years to complete and are generally done only in urbanized areas. The Corps, on the other hand can respond quickly to big and little problems in urban and rural areas. While FEMA studies only describe the flood problem to help set flood insurance rates and support local floodplain ordinances, the Corps will recommend how to reduce flood damages.

Floodplain management services are budgeted as a line item under "General Investigations, Collection and Study of Basic Data". Unlike many Corps line items, there is no easily identified community or constituency benefitted. Possibly because of this, last year Congress reduced the Administration's floodplain management services request from $8.8 to $6.3 million. Such a cut is equivalent to not helping 17,000 of the 80,000 people who ask for flood protection assistance.

The Corps has proposed a reprogramming of FY 87 funds to the floodplain managment services line item to make up for this reduction. Unless the Corps is able to reprogram funds, it will have to cut the more expensive technical services such as preparing hurricane evacuation studies, acquiring flood hazard data on the rising Great Lakes, and conducting a pilot effort on flood warning in flash flood areas.

Recommendation: Because of the need for the Corps' floodplain management services and the relative small cost to the federal budget compared to the benefits gained, we strongly urge:

1. that Congress approve the reprogramming for FY 87, and
2. that Congress fully fund the Administration's FY 88 request of $9.2 million.

2. Dam Safety Programs. Dam failures have resulted in some of the most catastrophic disasters in U.S. history. For example:

-West Virginia, 1972: Buffalo Creek Dam failure killed 125.
-Idaho, 1976: Teton Dam failure killed 14 and caused $1 billion in property damage.
-Pennsylvania, 1977, Laural Run Dam failure killed 40 people.
-Georgia, 1977: Kelly Barnes Dam failure killed 39.

-Colorado, 1982: Lawn Lake Dam failure killed 3 in Estes Park and cost the federal government over $5.6 million in disaster assistance expenditures.

There are currently fewer than 5,000 federal dams and over 80,000 non-federal dams in the nation. Nine thousand of the non-federal dams are rated as "high hazard". That means if they fail, people downstream will die. About 2,000 of the high hazard dams are currently determined as "unsafe".

Most dams are designed for a 50 year life. Dams have been constructed at the rate of about 750 per year since the early 1900s. In 1980, about 15% of the non-federal dams were 50 years old or more. By the year 2000, that percentage will rise to 35% and by the year 2020 to 85%. It can be seen that non-federal dams present a significant threat to life and property; a threat that will get worse over time.

Good inspection and maintenance can reduce that threat and extend the life of a dam. However, private dam owners typically will not provide that good maintenance without monitoring, advice, and direction from a government agency. State dam safety programs are the best way to provide that monitoring and advice. They can also help communities prepare warning systems, evacuation plans and regulatory standards for areas downstream of dams. However, given the size of the problem, they need help to build that capability.

After many years of debate and discussion, the Congress authorized an important dam safety program in the Water Resources Development Act of 1986. The Act authorized a five year program in four areas:

1. $15 million per year to build state dam safety programs. This money is to match, not replace, current state funding.

2. $500,000 per year to provide training for state dam safety inspectors.

3. $2 million per year for research to develop improved techniques in dam inspection as well as devices to provide continued monitoring of dams.

It can be seen that the Act focuses on building state dam safety programs. However, for FY 88, the Administration only requested funding for the fourth item, the national dam inventory. The Administration's argument is two fold. First, it feels that non-federal dams are a state problem where federal dollars should not be spent. Second, the Administration feels the states are not capable of using the money at this time. We disagree with both counts.

First, non-federal dams are a federal concern. When they fail, the federal government will invest a substantial amount of money to provide disaster relief and recovery. Five years of funding at $16 million a year can do much to prevent dam failures that have been shown to result in as much as $1 billion in damages. As long as the federal government is concerned about deaths and destruction and as long as it has a disaster assistance program, there will be a federal interest in the safety of non-federal dams.

Furthermore, the states are capable of absorbing the grants at this time. About one-half of the states have the basic framework for an adequate dam safety program. Once the state dam safety agency has the legislative authority, two vital ingredients for an effective program are qualified staff and funding. The dam safety provisions of the Water Resources Development Act are to provide just that.

Recommendation: In its FY 88 appropriations, Congress should fund the full $16 million for the four U.S. Army Corps of Engineers dam safety programs authorized by the Water Resources Development Act.

If there are any questions or comments on this testimony, please call Larry Larson, Executive Director of the Association, at (608) 266-1926.

STATEMENT OF BRUCE A. TSCHANTZ, P.E., UNIVERSITY OF TENNESSEE KNOXVILLE

Dear Senator Sasser:

It is my understanding that President Reagan has not requested funds to implement Title XII-Dam Safety of PL 99-662.

My recent research at the University of Tennessee for the Federal Emergency Management Agency (FEMA) shows that there are about 85,000 non-Federal dams in the country, which are under the regulatory jurisdiction of the states. My research of all fifty states also shows that only 21 states have adequate legislation, budgets, and personnel to conduct effective dam safety programs for protecting the public against sudden failures from unsafe dams. Since the Corps of Engineers completed its dam safety inspection program in 1981, under PL 92-367, where a third of the 9000 inspected dams found to be unsafe, two-thirds of those 3000 unsafe dams remain unsafe. Tens of thousands of other dams have not been inspected because of inadequate or non-existent state programs.

The Corps of Engineers has been rather passive toward the safety of non-Federal dams, although many of these dams were constructed, assisted, or financed by Federal agencies, such as the USDA Soil Conservation Service. Your Appropriations Subcommittee can follow up the Corps Inspection Program by helping states help themselves with initial funding for state dam safety inspection training, for implementing effective dam safety programs in states which have no programs, for establishing a National Dam Safety Review Board for setting implementation standards and monitoring state progress toward implementing dam safety programs, and for improving and transferring existing dam inspection technology.

I have asked your staff to set up three to five minutes of time for me to testify before your Subcommittee hearings, which I understand will be held March 30-31 and April 1-2. In the event that I would not be allowed to give testimony, I would like to request that this letter and the attached research report, which I wrote for FEMA, be entered into the written hearings record on the issue of Title XII dam safety.

Thank you for your help on this matter.

SUBCOMMITTEE RECESS

Senator DECONCINI. The subcommittee will stand in recess until 2 o'clock this afternoon in this room.

[Whereupon, at 11:15 a.m. Tuesday, March 31, the subcommittee was recessed to reconvene at 2 p.m. the same day.]

(AFTERNOON SESSION, 2 P.M. TUESDAY, MARCH 31, 1987)

NONDEPARTMENTAL WITNESSES

APPALACHIAN REGIONAL DEVELOPMENT PROGRAMS

STATEMENT OF HON. ROBERT C. BYRD, U.S. SENATOR FROM WEST VIRGINIA

OPENING REMARKS

Senator DECONCINI. The Senate Subcommittee on Energy and Water Development will come to order. Today, we are hearing testimony regarding the number of projects, and since the majority leader is here, I am going to yield to him. I welcome all the witnesses here.

We have a large number and long day of witnesses, and we may have to reschedule some of them in and out due to a vote that is due to start at 2:30.

At this time, Senator Byrd, I yield to you to make your statement.

Senator BYRD. Thank you, Mr. Chairman. There is a vote at 2:30 and there will be three back-to-back votes immediately after the first vote. There are four rollcall votes, therefore, beginning at 2:30. Normally, as you know, Mr. Chairman, when we have our respective party conferences, we recess from 12 o'clock noon to 2 o'clock in the afternoon so Mr. Dole can have his conference and we can have ours, and then we go back in at 2 o'clock.

But today, out of respect for our Governor from West Virginia, and knowing that he would be appearing here and wanting to be here to have the privilege of presenting him to this committee, I got the consent of the Senate to wait until 2:30 to reconvene.

So with that understanding, Governor Moore, I will have to leave shortly. I wanted to proceed briefly to say that it is a privilege to introduce to the committee of the Governor of West Virginia and the states' cochairman—states plural, cochairman of the Appalachian Regional Commission.

Governor Moore brings great experience to both of these jobs, having been both our Governor and Appalachian states' cochairman previously in the early 1970's. Governor Moore's chairmanship this time comes during a period when funding for the Appalachian regional development programs has been severely reduced.

However, the need for the Appalachian regional programs in West Virginia has never been greater. I am proud to have been successful in my efforts in the past to restore at least some funding for these programs despite the administration's proposal to terminate the operations of the Appalachian Regional Commission.

The programs which the Governor is here to discuss with us this afternoon represent an investment in the future of Appalachia. The study by Preston & Associates a few years ago, for example, found that the construction costs of the Appalachian highway system could be recovered within 5 years just from the benefits of the driving time saved by operators of vehicles on those highways.

This 5-year cost recovery does not even consider the benefits of additional jobs and economic development which will occur in parallel with the highway construction program.

So I am pleased, Governor Moore, as a member of this Appropriations subcommittee, and I am pleased, Mr. Chairman, to introduce to this subcommittee the Governor of the state of West Virginia. The Governor knows he has my full support and I hope he would have the full support of everybody on this subcommittee and on the committee for the very important programs of the Appalachian Regional Commission.

I thank you, Mr. Chairman, and I thank you, Governor, for attending here today.

Senator DECONCINI. Governor Moore, thank you, and please proceed.

The majority leader has expressed to us the significance of your testimony and we welcome you and would be happy to hear from the Appalachian Regional Commission on the fine work it has provided in your part of the nation. We welcome you here today.

Governor MOORE. Mr. Chairman, I deeply appreciate the opportunity to testify. There are a number of people in my state for years that have suggested that I have always had my public service eyes on this side of the U.S. Capitol, and I found that coming back today that it is just as difficult to testify in the Senate environment as it is to get a Republican in my state elected to this august body. [Laughter.]

I fought for 12 years with Congressman Jack Brooks in the House on many important matters, and it is a pleasure to see him here this afternoon. Now, if I could just get this appropriation, we would be in pretty good shape.

Senator DECONCINI. You are off to a good start, Governor.

Governor MOORE. Mr. Chairman, I am honored by the opportunity to come here and speak to you in support of the Appalachian Regional Commission program. I do this in the name of 13 Appalachian Governors who have unanimously asked that I serve as their cochairman and that I make this presentation to you and this subcommittee.

We are well aware, of course, that without your support, particularly in recent years, there would no longer be an Appalachian Regional Commission or for an opportunity for it to serve its people. Without the ARC, much of that being achieved in Appalacia today simply would not be done.

If I might be right up front, realizing the time constraints under which you are operating, it is certainly true that we are healthier as a region today. It is certainly true that we are better educated as a region today. It is probably true to say that we are more highly skilled and, to some degree, it is fair to say that probably, the distribution of wealth is a little better than it was in that year 1965 when we brought the ARC on stream.

I believe it is fair to say that we have done a good job for the citizens; that is, the Congress of the United States has done a good job for our citizens in Appalachia. But you know you cannot, in 22 years, overcome a set of problems created during a century of neglect and exploitation, and the fact is, we have not yet completed the job.

That, more than anything else, is the emphasis I want to make to the subcommittee today. This job in the Appalachian Regional Commission has not been completed. When we look across this country of ours and identify the poverty counties of the United States, we find there are 272 distressed counties in America today. Eighty-eight of those are in the Appalachian region, and I believe that is a clear indication that the job is not done.

As a Member of the Congress in 1965, I fought side by side with many of you to create the Appalachian Regional Commission. As the states' cochairman in the early seventies, I found it hard to keep the program alive. Now, in my second term as States' cochairman in 1987, I believe more strongly than ever that this is the right program at the right place at the right time.

All we ask is the opportunity to complete the job. We have a highway system in the Appalachian region that today dead-ends in a number of our mountains and which Congress has given us an abundance of support to move the means of entry into the Appalachian region and the opportunity to exit the Appalachian region only to find that these highway systems, these developmental highways, have not been completed.

That stands out as a hallmark of unfinished business. I represent the only state that is included in its entirety within the boundaries of the Commission. The Commission itself and its programs have been and continue to be important, not only to the officials of my state, but to the people in my state and to their future.

Over the years, West Virginia has received nearly $200 million in ARC funds for nonhighway programs. I dare say, the number of the water projects we are talking about today far exceed in a single effort the dollar value that we have received over a period of 22 years.

This type of investment is important to us, and I want to respectfully call to the Chair's attention the fact that we have taken the Congress' efforts here and leveraged those dollars on a 3-to-1 basis. They have been the catalyst for us to go to our people and say, "Look here."

We are getting some help out of the Congress of the United States. You have got to begin to support your own efforts, and we have leveraged these funds significantly.

Over the years, we have used this funding to tackle problems of poverty in the area, the outward migration. We have got a lot of problems to address: infant mortality, the problems of the unskilled, the difficulty of high school dropouts, and we have begun to realize some of the benefits of the program.

There is one thing, Mr. Chairman, I would like to draw to your attention. In the early 1980's, there was an impact in this region of the country again as it had never been impacted before.

When we saw the international economic forces at work that altered the U.S. economy, often more than to negate the effect on the region that we have in the Appalachians today, we found this region of the country slipping backward very fast.

GROWTH IN UNEMPLOYMENT

Our unemployment levels, which had been comparable to national levels, began to grow more rapidly in 1977, and even now, they are more than 1½ percentage points higher than the national average.

This is largely because the region itself has more than its proportionate share of industries such as primary products that have been adversely affected by the international economic situation and the general economics of the country.

The high dollar value, internationally, has handicapped significantly our ability to move the product that historically has been a part of our state and our region's history. We find ourselves in a position, Mr. Chairman, of finding industries that have been with us for generation after generation after generation now simply closing their doors. They are not going to another part of the country; they are simply saying they can no longer make it under the economics and the circumstances that exist today in America.

We suggest to you that when you look at the $1.3 trillion federal increase in federal spending in national defense from 1969 to 1984—and you are looking at a guy that is just as strong a national defense guy that exists in this country today—the region of Appalacia receives a small 3-percent participation in that budget.

I am advised, Mr. Chairman, that in my state of West Virginia alone, which doesn't lead the nation in unemployment but is close to the top, that in my state alone, that $1 billion in national defense spending in my state would generate 38,000 jobs, which wipes out two-thirds of our unemployment. Today, as one of the Appalachian states, we participate in less than 3 percent of that total defense spending.

We are actually repairing our economy ourselves, Mr. Chairman, because we have none of the influx of this spending which very judiciously is focused on the defense of this country and a lot of us support and support very, very firmly. The worldwide price of oil, when it has adversely affected everyone in the United States, has adversely affected Appalachian. The circumstances on coal production today have been adversely affected by world oil prices.

I might share with you the fact that we are still mining an awful lot of coal in Appalacia. In my state of West Virginia last year, we mined 10 million more tons of coal than the previous year. The gross product value of that coal is no greater than the 10 million less than the previous year, and we did not hire one additional coal miner to bring that additional coal production on stream.

FUTURE OF ARC

Mr. Chairman, in February the Commission meeting of the Appalachian Governors, from which 11 of the 13 Governors were present, we simply agreed that our mission is not completed and that we have to establish some principles for the ongoing that are taking the program to bring this region once and for all out of the disparity of participating in the national influence that has existed for generations in other parts of the country.

We want to accelerate the completion of our highway program. To have a beautiful four-lane highway that goes nowhere or that terminates itself at the face of a mountain only to find that there is not sufficient resources within the region itself with that seed money that comes from the federal government, from the Senate of the United States, and the House of Representatives is absolutely essential.

We cannot rescue this region of the country by continuing to permit it to be encircled by its inability to diverse traverse its own mountains. The circumstances are such that we believe the completion of the highway program is fundamental. We have got to have special assistance for the region's most economically depressed areas and we don't ask a lot of money in this particular regard.

We feel that the problems in the coal fields of Kentucky and Ohio and Virginia and Maryland and West Virginia and Pennsylvania are absolutely at a point today where we have got to retrain these individuals and find them a better opportunity or they are going to be the government's responsibility.

If I might compare with you an analogy that exists in this country today, which is a little bit hard to realize, 12 brief years ago, the state of Massachusetts and the state of West Virginia were the opposite ends of the spectrum that they are today in terms of their economies and in terms of their welfare rolls.

In 1974, as Governor of West Virginia, I had only 327 fathers that were unemployed in my state. West Virginia had a 4-percent unemployment rate; Massachusetts led the nation in unemployment and had the largest group of entities per capita from their state on the unemployment rolls.

We have seen the impact of this revolution economically across this country adversely affect itself again on the Appalachian region, we just simply say, sir, that we have to draw to your attention that the dollars we ask are significant, we realize, particularly with budget crunches and the difficulties to attack the problem of the national deficit.

FUNDING REQUEST

But $319 million to move this program forward where we states can take this as the seed money, move out, ask our people to make a corresponding sacrifice, we can get this job done and we will do it ourselves. But standing alone, Mr. Chairman, we can't do it. For us to terminate this program, we are going to have monuments of unfinished work which will stand as testimonies, in my judgment, to an uncaring

Congress, perhaps; an uncaring administration, perhaps; certainly not an uncaring people, that want nothing more than just an opportunity to participate in this which we call the great American dream.

Of the dollars involved, $234 million of those are for the highway program; $62 million are for newly designed programs for economic and human resource development. So we can make people productive in another job undertaken. We want to put $15 million into a special assistance program to attack the 88 distressed counties that exist in this Appalachian region; a small portion of $5 million to support the local school districts and the local development districts, because it is there where we get the major thrust for local participation.

We are saying to you that if this committee will give us this opportunity, we will match those dollars in the Appalachian region and we will prove to you that we can get this job done. We don't want to be here forever. I happen to be an individual in public life that simply suggests the fastest way you can get the government out of your hair is to get the job done and get it completed. The federal highway program is probably one of the prime examples.

We wouldn't be testing a program today of the will of the Congress versus the will of the President in that program if we would just move with all the dispatch to complete it. Then we wouldn't have to worry about reappropriations every year for a program, and the same is true in the Appalacian program.

Sir, if you will give us the opportunity, we think that we can make you proud of a region of this country that has had its difficulties; it has had its problems. Its major difficulty, basically, is the fact that when the good Lord created us, he gave us terrain that is so disconnected and so mountainous and so difficult to traverse that in of and themselves, the people are hard put for resources that are available to them to make their areas available for either egress or ingress for the opportunity to participate with their fellow citizens on somewhat an even or par basis.

In the Appalachian Regional Commission, my friends, the Governors, have simply said: "Arch, take this message to the Congress. Tell them that we know that we do not have the opportunity for the Commission to continue on ad infinitum, but we want them to understand that if they will give us the opportunity that we can complete this program."

Mr. Chairman, I would conclude that testimony and ask if you would permit me to have my full statement in the record.

Senator DECONCINI. Governor Moore, your full statement will be permitted in the record. If you have a supplementary statement that you care to submit, we can keep the record open for a week so that you can submit that. Thank you for your statement.

As you know, Governor Moore, Congress has not turned their back on Appalachia. Though the appropriation is less and less, you have a lot of support here. On a bipartisan basis, Democrats and Republicans have stood up for the worthiness of the argument that you have made. It is difficult, because the administration has asked for no funds, as you know, since 1981, and indeed, that means we have a smaller pie to cut up.

I think your testimony is excellent. It points out the self help that you believe in and that you practice, and we can assure you that we will do all we can to assist. I don't want to leave you with the misimpression that we are going to get $319 million for this, but I can assure you of support and no one fights harder for this program in markup than Senator Byrd.

Governor MOORE. I appreciate that, sir.

Senator DECONCINI. When he shows up, he knows what he is doing and he usually has a potfull of proxies or he has Senator DeConcini there voting with him for the amounts he wants. I can assure you this program will not go unheard and your voice will carry some weight when we do get to the project.

Governor MOORE. Mr. Chairman, I wanted to express to you my appreciation, but I also want to say to you, on a personal basis, we are aware that you have helped us. We are aware that we are quite far distance from your home constituency, and your willingness to recognize the problem has given us great hope over the years. We just simply want to express our deep appreciation for your understanding your support.

We know that road has been difficult and that, perhaps, is even more difficult at times to traverse, but you have been helpful to us, and I thank you.

Senator DECONCINI. Thank you, Governor. When you were in Congress with Senator Byrd, long before I came to this body, you gentlemen invested in America, which included the great state of Arizona and California and Utah and Nevada and the West, and we believe in investing in your part of the country, too.

It is all important. It is now a matter of how do we cut the pie as it gets smaller, but I am sure there will be some appropriations. Your statement will carry a lot of weight, Governor.

Governor MOORE. Thank you, sir. I appreciate your kindness.

[The statements follow:]

STATEMENT OF GOV. ARCH A. MOORE, JR., OF WEST VIRGINIA

I AM HONORED BY THE OPPORTUNITY TO COME HERE AND PERSONALLY EXPRESS OUR APPRECIATION FOR YOUR SUPPORT OF THE APPALACHIAN REGIONAL COMMISSION. I DO THIS IN THE NAME OF THE APPALACHIAN GOVERNORS, LOCAL OFFICIALS, AND THE PEOPLE OF THE REGION.

WE ARE WELL AWARE THAT WITHOUT YOUR STRONG SUPPORT, PARTICULARLY IN RECENT YEARS, THERE WOULD NO LONGER BE AN APPALACHIAN REGIONAL COMMISSION. AND WITHOUT THE ARC MUCH THAT IS BEING ACHIEVED IN APPALACHIA WOULD SIMPLY NOT BE DONE.

LET ME ADDRESS, RIGHT UP FRONT, THOSE WHO SAY THAT ARC'S JOB IS DONE, ITS MISSION ACCOMPLISHED.

IT IS CERTAINLY TRUE THAT WE ARE HEALTHIER, BETTER EDUCATED, MORE HIGHLY SKILLED, AND WEALTHIER THAN WE WERE IN 1965. WE HAVE DONE A GOOD JOB FOR THE CITIZENS OF APPALACHIA.

BUT YOU CANNOT, IN 22 YEARS, OVERCOME A SET OF PROBLEMS CREATED DURING A CENTURY OF NEGLECT AND EXPLOITATION. AND, THE FACT IS, WE HAVE NOT YET COMPLETED THE JOB.

WHEN 88 OF THE NATION'S 272 DISTRESSED COUNTIES ARE IN APPALACHIA, IT IS CLEAR THE JOB IS NOT COMPLETE.

AS A MEMBER OF CONGRESS IN 1965, I FOUGHT SIDE-BY-SIDE WITH MANY OF YOU TO CREATE THE APPALACHIAN REGIONAL COMMISSION. AS THE STATES' CO-CHAIRMAN IN THE EARLY 70S, I FOUGHT TO KEEP THE PROGRAM ALIVE. AND NOW IN MY SECOND TERM AS STATES' CO-CHAIRMAN IN 1987, I BELIEVE MORE STRONGLY THAN EVER THAT THIS IS THE RIGHT PROGRAM IN THE RIGHT PLACE AT THE RIGHT TIME.

WE CAN COMPLETE THE JOB. BUT WE ARE NOT YET THERE. WE HAVE MORE TO DO, AND WE CONTINUE TO NEED YOUR HELP.

I REPRESENT THE ONLY STATE INCLUDED IN ITS ENTIRETY WITHIN THE STATUTORY BOUNDARIES OF THE REGION. THE APPALACHIAN REGIONAL COMMISSION AND ITS PROGRAMS HAVE BEEN AND CONTINUE TO BE OF GREAT IMPORTANCE TO THE LOCAL DEVELOPMENT OFFICIALS AND THE PEOPLE OF MY STATE AS AN INVESTMENT IN OUR FUTURE. OVER THE YEARS WEST VIRGINIA HAS RECEIVED NEARLY $200 MILLION IN ARC FUNDS FOR NON-HIGHWAY PROGRAMS, WHICH WE HAVE LEVERAGED ON A BETTER THAN THREE TO ONE BASIS. THIS TYPE OF LEVERAGING OF ARC FUNDS HAS BEEN REPEATED IN EVERY APPALACHIAN STATE.

OVER THE YEARS WE HAVE USED THIS FUNDING TO ATTACK THE PROBLEMS OF POVERTY IN OUR REGION, AND THE OUTMIGRATION OF OUR POPULATION.

WE DEVELOPED PROGRAMS TO ADDRESS THE PROBLEMS OF INFANT MORTALITY, AND THE AVAILABILITY OF MEDICAL CARE AND WE ATTACKED THE PROBLEM OF HIGH SCHOOL DROPOUTS.

SUBSEQUENT EVENTS THEN BEGAN TO UNDO SOME OF OUR ACHIEVEMENTS.

THE EARLY 1980S BROUGHT MANY ADVERSE NATIONAL AND INTERNATIONAL FORCES THAT ALTERED THE U.S. ECONOMY. OFTEN THEY HAD MORE OF A NEGATIVE EFFECT ON THE REGION THAN ON THE REST OF THE UNITED STATES, AND THE APPALACHIAN ECONOMY BEGAN TO SLIDE BACKWARDS.

OUR UNEMPLOYMENT LEVELS, WHICH HAD BEEN COMPARABLE TO THE NATIONAL LEVELS, BEGAN TO GROW MORE RAPIDLY IN 1977, AND EVEN NOW, THEY ARE ONE AND ONE-HALF POINTS HIGHER THAN THE NATIONAL AVERAGE. THIS IS LARGELY BECAUSE THE REGION HAS MORE THAN ITS PROPORTIONATE SHARE OF INDUSTRIES, SUCH AS PRIMARY PRODUCTS AND DURABLE GOODS, WHICH HAVE EXPERIENCED A RELATIVE DECLINE IN EMPLOYMENT IN THE UNITED STATES. AT THE SAME TIME THE REGION HAS A SMALLER SERVICE AND TRADE ECONOMY, A CONDITION COMMONLY ASSOCIATED WITH A MORE

RURAL ECONOMY. THESE TWO SECTORS HAVE ACCOUNTED FOR MUCH OF THE JOB GROWTH IN THE NATONAL ECONOMY.

THE HIGH VALUE OF THE DOLLAR INTERNATIONALLY HAS ENCOURAGED IMPORTS AND HELPED BUILD A LARGE TRADE DEFICIT, WHICH ADVERSELY AFFECTED APPALACHIAN PRODUCTION OF PRIMARY AND FABRICATED METALS, WOOD PRODUCTS, CHEMICALS, TEXTILES AND APPAREL, GLASS, AND COAL. HIGH INTEREST RATES FROM 1982 TO 1984, COMBINED WITH LOW LEVELS OF MANUFACTURING ACTIVITY AND EXCESS PLANT CAPACITY, HAVE RETARDED INVESTMENTS IN PLANTS AND EQUIPMENT AND HALTED NEW CONSTRUCTION IN MANY PARTS OF THE REGION.

MOST OF THE $1.3 TRILLION INCREASE IN FEDERAL SPENDING BETWEEN 1979 AND 1984 WAS IN DEFENSE RELATED ACTIVITIES, OF WHICH THE REGION RECEIVES ONLY A SMALL FRACTION (3.2%) OF THE DOLLARS SPENT IN THE UNITED STATES. THE REGION RECEIVED AN EVEN SMALLER FRACTION OF THE FEDERAL MONIES SPENT ON RESEARCH AND DEVELOPMENT FOR DEFENSE. THE RECENT WORLD-WIDE DECLINE IN OIL PRICES FROM ITS HISTORIC PEAK ALTERED THE DEMAND FOR COAL AND DEPRESSED COAL MARKETS. PROJECTIONS SHOWING A DEMAND INCREASE IN THE NUMBER OF MARKETS FOR APPALACHIAN COAL WERE NOT REALIZED. AND, OF COURSE, BECAUSE OF IMPROVED TECHNOLOGY, WE CAN MINE MORE COAL WITH FEWER COAL MINERS.

AT OUR FEBRUARY COMMISSION MEETING, ATTENDED BY 11 OF THE 13 APPALACHIAN GOVERNORS, WE AGREED THAT ARC'S MISSION IS INCOMPLETE AND WE ESTABLISHED THE PRINCIPLES FOR AN ONGOING PROGRAM FOR THE REGION FOR THE FUTURE. IT WOULD PROVIDE FOR THE FOLLOWING MAJOR ELEMENTS:

1. ACCELERATING COMPLETION OF THE HIGHWAY CORRIDOR PROGRAM. FROM THE DAY THE ARC WAS CREATED, THE HIGHWAY SYSTEM WAS THE BACKBONE OF OUR EFFORT TO CREATE AN ECONOMICALLY COMPETITIVE REGION. IT IS TWO-THIRDS COMPLETE AND THE DIVIDENDS IN TERMS OF JOBS HAVE BEEN ENORMOUS. BUT TO GET THE FULL BENEFIT OF THE SYSTEM, WE MUST COMPLETE IT, AND WE MUST DO SO IN A TIMELY FASHION.

2. PROVIDING SPECIAL ASSISTANCE TO THE REGION'S MOST ECONOMICALLY TROUBLED COUNTIES, LARGELY CONCENTRATED IN THE COAL FIELD COUNTIES OF OHIO, VIRGINIA, KENTUCKY, TENNESSEE, AND MY OWN STATE, WEST VIRGINIA.

3. ASSISTING ECONOMIC AND HUMAN RESOURCE DEVELOPMENT PROJECTS THROUGHOUT THE REGION, WHICH WOULD MAINTAIN THE MOMENTUM OF ECONOMIC PROGRESS AND MAKE THE REGIONAL ECONOMY MORE COMPETITIVE IN WORLD MARKETS.

4. SUPPORTING AND IMPROVING THE EFFECTIVENESS OF THE LOCAL DEVELOPMENT DISTRICTS, WHICH AID BOTH THE STATE AND LOCAL GOVERNMENTS IN PLANNING AND CARRYING OUT IMPROVEMENTS IN LOCAL AREAS.

THE 1988 BUDGET REQUEST OF $319 MILLION, WHICH I HAVE SUBMITTED ON BEHALF OF THE APPALACHIAN GOVERNORS, WILL LET US MOVE FORWARD AGGRESSIVELY ON THESE FRONTS TO ASSIST THE PEOPLE OF THE REGION. SPECIFICALLY, WE ARE REQUESTING:

1. $234 MILLION FOR THE ARC HIGHWAY PROGRAM, NEARLY ALL FOR FURTHER PROGRESS ON THE CORRIDORS SO WE CAN CLOSE CRITICAL GAPS IN THE SYSTEM.

2. $62 MILLION FOR OUR NEWLY DESIGNED PROGRAM OF ECONOMIC AND HUMAN RESOURCE DEVELOPMENT.

3. $15 MILLION FOR SPECIAL ASSISTANCE TO THE APPROXIMATELY 88 MOST DISTRESSED COUNTIES.

4. $5 MILLION FOR SUPPORT OF LOCAL DEVELOPMENT DISTRICTS AND REGIONAL TECHNICAL ASSISTANCE.

5. $1.850 MILLION FOR THE FEDERAL 50 PERCENT SHARE OF COMMISSION EXPENSES, WHICH WILL BE MATCHED

BY AN EQUAL CONTRIBUTION FROM THE APPALACHIAN STATES.

6. $550,000 FOR EXPENSES FOR THE OFFICE OF THE FEDERAL CO-CHAIRMAN.

7. $600,000 FOR COSTS INCURRED BY FEDERAL AGENCIES IN ADMINISTERING PROJECTS OTHER THAN HIGHWAYS.

IN TOTAL A BUDGET REQUEST OF $319 MILLION.

THE BUDGET DOCUMENT CONTAINS DETAILS OF OUR REQUEST, ILLUSTRATIONS OF THE KINDS OF PROJECTS FUNDED, AND A MORE DETAILED DESCRIPTION OF THE REGION'S ECONOMIC HEALTH.

THERE ARE THOSE WHO HAVE SAID, AND WHO MAY CONTINUE TO SAY, THAT ASKING FOR THIS AMOUNT OF MONEY IS PLAYING FAVORITISM IN THE AMERICAN GEOGRAPHY OF TODAY. BUT, WHEN HOUSING SUBSIDIES WERE NECESSARY TO DEAL WITH SOME OF OUR URBAN PROBLEMS, I DID NOT HESITATE TO BE SUPPORTIVE. WHEN FARM PRICE SUPPORTS WERE REQUIRED TO SUSTAIN THE AGRICULTURAL ECONOMY OF THE MID-WEST, I DID NOT HESITATE. WHEN HYDRO-ELECTRIC POWER WAS NECESSARY TO DEVELOP THE WEST, I DID NOT HESITATE.

MY FRIENDS, WE HAVE TAKEN MORE THAN OUR SHARE OF BUDGET CUTS AND DONE MORE THAN OUR SHARE OF BELT-

TIGHTENING. I WOULD POINT OUT THAT FEDERAL EXPENDITURES ON A PER CAPATA BASIS IN APPALACHIA, WHICH HAD REACHED AS HIGH AS 84 PERCENT OF THE NATIONAL AVERAGE, ARE NOW ONLY 80 PERCENT OF THE NATIONAL AVERAGE.

SO I COME BEFORE YOU TODAY TO ASK FOR YOUR ASSISTANCE FOR THIS GREAT REGION OF OURS IN ORDER THAT WE MAY TAKE OUR RIGHTFUL PLACE AS AN IMPORTANT CONTRIBUTOR TO THE NATION'S PROSPERITY AND, THEREBY, BENEFIT THE NATION AS A WHOLE.

AS A FORMER CONGRESSMAN, I CAN UNDERSTAND THE PROBLEMS ASSOCIATED WITH THE FEDERAL DEFICIT. AS A GOVERNOR, I UNDERSTAND STATES' NEEDS.

WE WILL GLADLY WORK WITH YOU IN ADDRESSING THE REGION'S DIFFICULTIES WITHIN THE FRAMEWORK OF THE FEDERAL FISCAL CONSTRAINTS. IN THAT CONTEXT WE ASK FOR YOUR CAREFUL CONSIDERATION OF THIS ENTIRE BUDGET, BECAUSE IT REPRESENTS NOT A GIVEAWAY, BUT AN INVESTMENT IN OUR FUTURE WHICH WILL REAP INCALCULABLE DIVIDENDS IN HUMAN AND ECONOMIC GROWTH AND DEVELOPMENT.

THIS IS A PROGRAM WHICH I THINK SPEAKS TO THE PEOPLE. IT IS AN OUTSTANDING PROGRAM, WITHOUT QUESTION THE MOST SUCCESSFUL SHORTCUTTING OF THE RELATIONSHIP FROM THE FEDERAL ESTABLISHMENT TO THE PEOPLE. BY JOINING TOGETHER THE FEDERAL GOVERNMENT AND THE GOVERNORS IN A POLICY-MAKING PARTNERSHIP AND BY SEEING TO IT THAT THE DOLLARS ARE THERE TO MEET THE PRIORITIES AS WE SEE THEM, WE MAKE GOVERNMENT WORK IN A TRULY DEMOCRATIC FASHION.

LADIES AND GENTLEMEN, I WILL CONTINUE TO BE A STRONG ADVOCATE FOR THE APPALACHIAN REGIONAL COMMISSION AND FOR THE PEOPLE OF THE REGION, BECAUSE I BELIEVE IT IS RIGHT.

I THANK YOU FOR THIS OPPORTUNITY TO BE SUCH AN ADVOCATE, AND I WOULD WELCOME YOUR QUESTIONS.

STATEMENT OF GOV. WILLIAM DONALD SCHAEFER OF MARYLAND

The State of Maryland is pleased to be part of a federal-state partnership that is as responsive to the needs of Marylanders as the Appalachian Regional Commission. In fact, Maryland had a hand in the creation of the ARC. In May 1960, our late Governor J. Millard Tawes called a meeting in Annapolis of the governors of nine Appalachian states to discuss the problems of the Region From this meeting grew the Conference of Appalachian Governors, an active coalition which eventually carried its program to Washington and won the support of President Kennedy.

Now, almost twenty-seven years after that conference in Annapolis, I carry to you the message that the Commission's work isn't finished! For the six years of this administration in Washington, we have endured budget cut after budget cut. The ARC has been cut to the bone. The problems in our state and the other Appalachian states haven't been addressed. It's time once again to let the nation know, to let the world know, that government here in Washington cares about people.

The Appalachian Regional Commission is a most effective mechanism for showing how much government cares. It's effective because it allows local elected officials through their Local Department Districts and their Governors to tell Washington what their constituents need, and their needs are met!

I have seen first-hand, the benefits of the ARC program. The development highway has opened up our Western Maryland counties to industry and commerce We have begun to diversify our economy. Small to medium-sized companies have located where once only railway dependent industry would locate.

The quality of life has improved dramatically. Primary health care and health education programs are now important components in a health care system which not only restores health but keeps people healthy.

More than fourteen hundred new housing units are in the Appalachian portion of our state because of our Appalachian Housing Fund. More than twenty-five million dollars of private and other public housing money was leveraged with only a few million dollars of ARC money.

The education of our citizens has not been overlooked. ARC over the years has funded vocational and higher education programs which have prepared our citizens for jobs. These creative educational programs, in conjunction with state, local and ARC efforts to retain and expand employment opportunity, have been able to keep many of our young people living and working in Appalachia Maryland. In addition, dropout prevention programs funded by ARC are keeping young people in school and off of the unemployment rolls.

It is clear from our experience with ARC that this program's flexibility and sensitivity allows it to touch the lives of people where the need is the greatest. Public dollars have been responsive to public needs.

Maryland stands behind Governor Moore of West Virginia, our States' Co-Chairman, in his efforts on behalf of the thirteen Appalachian states to assure the continuation of the ARC program. We strongly urge that the Congress and the Administration support the Appalachian Governors' FY '88 budget request of $319 million.

STATEMENT OF GOV. RICHARD F. CELESTE OF OHIO

Mr. Chairman, members of the Committee, my name is Richard F. Celeste, Governor of the State of Ohio. I appreciate this opportunity to present an overview of the Appalachian program in Ohio. This administration has made as one of its highest priorities the creation of jobs and the building of healthy communities.

The overall goal of Ohio Appalachia's Development Program is to improve the economic and social standard of living in the 28 ARC designated counties in Ohio to a level equal to the rest of the state.

The following information represents the state's determination to maintain Ohio Appalachia's continued course of economic and social recovery, to encourage a spirit of public/private cooperation and to create innovative programs that will open new horizons for all Ohio Appalachians.

The Appalachian Regional Commission's (ARC) resolution establishing policies for the Commission's non-highway programs has set a clear direction as to where the Appalachia program should go and how it can most effectively get there. In Ohio, the priorities for the development program for Appalachia are the enhancement of private investment and upgrading public facilities/services throughout the 28 county Ohio Appalachian area and strengthening public/private cooperation.

The following highlights are examples of Ohio implementing the priorities noted above.

HIGHLIGHTS

Area Economic and Human Resource Development

The state of Ohio recently included two projects that follow the guidelines of the Area Economic and Human Resource Development Program. The New Philadelphia Mall and Access Road ($697,000 ARC funds) will employ up to 2,000 people in an economically depressed area. Since the Commission is encouraging states to develop and implement programs to create and retain job opportunities in its region, we feel that this particular project is important.

Another project that the state of Ohio recently submitted is a 28 county Housing Revolving Loan Program. ARC funds will be used to assist in providing safe, sanitary, affordable housing for Ohio Appalachians. A rental rehabilitation section is included in this program.

In the past, projects such as the Clermont County Day Care have been funded with the ARC dollars. This is particularly noteworthy because land was donated by the Ford/Milicron Company of nearby Cincinnati, equipment from nearby hospitals was donated and students from nearby academic-institutions donated their time. This type of public/private partnership is the backbone of the ARC program.

Regional Program Initiatives

This part of the Resolution takes an innovative approach of combining ideas and resources. The state of Ohio has submitted a project [Muskingum River Marina ($95,000 ARC funds)] which will promote tourism along the Ohio River as well as create jobs. It is anticipated that revenues from tourism will provide much needed dollars to communities in both Ohio and West Virginia which are located along the Ohio River.

Distressed Counties

Two Ohio counties have been determined to be distressed by ARC (Adams and Pike). Special emphasis includes designated funding for the very basic essentials of a community. These essentials include, but are not limited to, potable water systems, sewage treatment or any other factor(s) that will provide basic human needs to residents.

A noteworthy project that has been the recipient of ARC funds is the Ginger Ridge Road/Lick Skillet Road Waterline Extension in Adams county. ARC funds in the amount of $79,200 were used to install 2 to 3 inch waterlines that will connect to existing waterlines. If the waterlines had not been connected, area residents would have continued to be forced to use contaminated well or cistern water. A more recent project requesting ARC funds is the Northwest Water System Extension. ARC funds requested are $184,000. Seven miles of waterline will be installed to provide safe, potable water. A school district is located in the proposed service area expansion. Officials from the Jefferson school district frequently pay to have water hauled in for use in the school cafeteria and restrooms. This project will alleviate that problem.

Research and Technical Assistance

The Resolution will allow for training and other special studies. The state of Ohio has submitted two projects in its 1987 Investment Package that could be categorized as Research and Technical Assistance as defined by the Resolution.

The Ohio Technology Transfer Organization (OTTO) has submitted an application requesting $300,000 of ARC funds. The proposed project would include product identification, assistance in export activities, and providing engineering and marketing support to businesses within Ohio Appalachia.

Another project, Entrepreneurship Training and Assistance Program, has requested $30,000 in ARC dollars. This program will provide technical assistance for business start-ups to minorities and or females in ten Appalachian counties. My administration is committed to excellence in public education and training programs. We intend to provide youths and adults with practical experience in the work world. This effort includes vocational, technical and professional skill training, internships in government and private industry, entrepreneurship training and exposure to small business owners.

During the life of the ARC program, there have been over 146,000 workers added to the labor force of Appalachian Ohio, as well as the creation of over 80,000 jobs. There have been 16 joint vocational schools opened that have provided additional training opportunities for the residents of Ohio Appalachia. Finally, there has been a reduction in poverty levels and significant improvements in health services and educational opportunities for Ohio's ARC residents. These are only indicators of the impact of the ARC program on the lives of the Ohio Appalachian population, indicators I feel that demonstrate the importance of continuing the ARC program.

STATEMENT OF GOV. CARROLL A. CAMPBELL, JR., OF SOUTH CAROLINA

Dear Mr. Chairman:

I am writing to urge your favorable support of the Appalachian Regional Commission Governors' FY 1988 budget request.

Though South Carolina's ARC appropriation is one of the smallest in terms of dollars, the Commission's initiatives have strongly impacted our ARC Region. Our six counties have successfully used ARC programs to create technologically diverse employment in our textile-dominant region through infrastructure, technical assistance, and education projects. In most cases, the development would not have occurred, and our work force would not have been prepared to fill these new jobs without the assistance that ARC provides.

One of the best aspects of the Commission's programs is the unique flexibility given to each state in determining the most appropriate use of ARC funds. This has allowed us to concentrate our priorities in the very areas which keep our Region from being economically competitive: public works projects for infrastructure development and education. At the same time, other states have successfully implemented programs to improve the quality of life for their citizens.

I would also like to encourage your review of the two Governor's Resolutions of the Commission. The Challenges for Rural America and Completing ARC's Mission outline the common initiatives and goals of the 13 ARC states.

In closing, I would like to affirm my commitment to South Carolina's ARC program. It is an integral force in my economic development strategy for our six upstate counties. Thank you for your continued support of these valued and cost-effective programs. I and the citizens of South Carolina appreciate your support.

Appalachian Regional Commission

Governors' Resolution Number ________

CHALLENGES FOR RURAL AMERICA

Whereas, the Appalachian Regional Commission -- in accordance with its statutory responsibilities to provide a forum for the consideration of regional problems, conduct inventories of regional resources, and recommend more effective federal, state, and local public and private programs — has in the past year engaged in a series of studies, meetings and workshops involving the states, local development districts and other public and private organizations in order to examine changes in the Region's economy relative to changes in the national and international economic environment, to explore the Region's capacity for growth within that environment, and to identify strategies and programs for improving economic opportunities in the Region; and

Whereas the results of these efforts indicate that rapidly changing national and international economies over the past decade have created new challenges for rural areas throughout the nation, especially for the Appalachian Region, and that these challenges involve the provision of infrastructure for both economic and human resource development; development of programs to adapt and apply new technologies to enhance the productivity of our industries and commerce; improvement of the education and skills of the Region's workers; and increased access to financial and technical resources necessary to successful business development; and

Whereas, these challenges reaffirm the need for the Commission to respond to changing economic conditions in addressing the Region's remaining problems and in stimulating discussion and debate about how to address problems in rural economies generally.

NOW THEREFORE BE IT RESOLVED BY THE GOVERNORS OF THE 13 APPALACHIAN STATES THAT:

1. It is in the national interest for the Nation to develop a coordinated state/federal response to address the needs of rural areas.
2. The following principles should guide the design and implementation of rural development programs:
    a. Governors should be involved in the design and implementation of any new federal initiatives to address the issues of rural America.
    b. The private sector is a critical element in economic development and public-private cooperation must be fostered and achieved at local, state and federal levels.
    c. Programs designed to strengthen rural America's "human infrastructure" — its workers — must be central to any successful effort to revitalize rural economies. Not only must greater emphasis be placed on keeping students in school and improving the quality of the education they receive, but a higher priority must be given to adult literacy, job training, and entrepreneurial development programs aimed at increasing not only the range of

employment options for individual workers, but overall workforce flexibility as well.

d. Rural economic development programs must also recognize the need to meet the competitive challenges posed by changes in the national and international economies by applying new technologies, elevating manpower skills, and providing greater access to financial and technical resources necessary to business formation and expansion.

e. Rural development programs must be sensitive to differing local needs and flexible to permit adaptation to different community, state and regional circumstances.

3. This resolution shall be transmitted to all appropriate Administration and Congressional officials and other relevant individuals and organizations.

Appalachian Regional Commission

Governors' Resolution Number ________

COMPLETING ARC'S MISSION

Whereas, in 1981, in response to a request from the Congress, the Appalachian Governors submitted recommendations for an Appalachian Regional Commission five-year "finish-up" program in area development and an eight-year program for highways; and

Whereas, in their report to the Congress the Governors asserted that "the work of ARC is not complete", that their recommendations would still "leave much undone but would provide for an orderly completion of ARC efforts now in progress"; and

Whereas, while the Congress has never formally adopted the 1981 recommendations, the Governors — in order to show good faith — have abided by these recommendations beginning in FY 1983, and have made significant progress toward their goals from FY 1983 through FY 1987; and

Whereas, Congressional appropriations during this period have averaged less than one-half of the 1981-recommended amounts, making impossible "orderly completion of ARC efforts...in progress"; and

Whereas, present national and international economic conditions have had a particularly adverse impact on Appalachia, with its traditional reliance on basic manufacturing and mining and have created new challenges and opportunities for our Region:

Therefore, be it resolved by the Governors of the 13 Appalachian States that:

1. The "orderly completion of ARC efforts...in progress" remains a vital goal in order to solidify the gains made and to enable the Region to continue its progress toward national economic standards.

2. Changing economic conditions, which have created new challenges and opportunities for the Region, dictate changes in some aspects of ARC area development activity.

3. These changes should be of a nature to enable the Commission to respond to changing economic conditions, to maintain a leadership role in addressing the Region's remaining problems, and to provide programs with flexible funding so that the States can pursue both Regional priorities and initiatives tailored to their particular needs.

4. The entire Appalachian Development Highway System, the backbone of ARC's effort to make the Region more competitive economically, must be completed within a reasonable time frame, and a means for accomplishing this should be sought in cooperation with the Federal Co-Chairman, the Congress and the Administration.

5. This resolution shall be transmitted by the States' Co-Chairman to all appropriate Administration and Congressional officials and shall form the basis of our efforts to obtain legislation to enable the Commission to complete the mission it was given in 1965.

STATEMENT OF GOV. MARTHA LAYNE COLLINS OF KENTUCKY

As you know, governors of the Appalachian States approved several resolutions for the Appalachian Regional Commission's area development programs in Fiscal Year 1988 and beyond at the February 22, 1987 Commission meeting. The resolutions provide for regional program initiatives to encourage investments for improving economic competitiveness, broader objectives for the jobs and private investment program and the extension of a special funding category for distressed counties.

The Appalachian Regional Commission funds are vital if our Appalachian counties are to reach economic parity with the other areas of the nation. Our funds have been well utilized for basic public utilities, health care, education, industrial development and technical assistance and training, but much remains to be done if we are to complete our objectives.

Past Congressional efforts on behalf of the Commission are well recognized and greatly appreciated, and I would like to request your continued interest and leadership in securing appropriations for the Appalachian Regional Commission to proceed with its mission.

THE APPALACHIAN REGIONAL COMMISSION PROGRAM IN KENTUCKY

Our Kentucky Appalachian people are a proud people with many accomplishments and achievements to their credit. They have the same needs and desires of people throughout Kentucky, the Appalachian Region and the nation. However, heavily dependent upon a resource based economy and faced with some of the most severe geographical limitations of any area of the nation, they have been unable to gain economic parity. The Appalachian Regional Commission has been a welcomed partner by providing much needed funds for roads, hospitals, vocational schools and housing.

During my administration, in addition to providing considerable funding for the public facilities referenced above, almost $1,200,000 has been made available to attack the high school student dropout problem. Various approaches to dropout prevention were implemented in 24 of Kentucky's 49 Appalachian counties, the Kentucky Educational Television network combined with a local outreach program for the purpose of creating awareness and action on dropout prevention and the Kentucky Department of Education established a technical assistance program for dropout prevention.

An additional amount totalling some $350,000 has been directed toward strengthening partnerships between school and business and industrial partners for improved school services and programs. Two annual school and community partnership conferences have been held, and each has attracted about 600 school and business partners from across the state. Our partnerships program has received national recognition.

Eighteen mini-grants were awarded under the partnerships program to schools throughout the Kentucky Appalachian Region for various partnership projects including a gifted and talented program, a career orientation project, teacher training in computers, a tutorial program, a work-study program and an attendance and academic achievement program. Further, the Kentucky Educational Foundation has awarded 14 mini-grants ranging from $1,000 to $5,000 each for teachers in the region in the subject areas of industrial arts, social studies, languages, fine arts, math and biology. Although presently funded with Commission funds only, the "Forward-in-the-Fifth" organization has been established to organize local affiliates and focus attention on the need for a quality education in Kentucky's Fifth Congressional District where less than 60 percent of the students of each entering ninth grade class finish high school.

The new policies for the Commission's non-highway or area development program established by resolutions approved at the February 1987 Commission meeting are regarded as positive steps toward the revitalization and continuation of the Appalachian Regional Commission program. As evidenced by some of our earlier accomplishments, we are interested in improving our most important resource, our people, through advances in education, as well as providing training opportunities whenever possible. Our eastern Kentucky communities realize that they lack the competitive advantage for "smoke-stack-chasing" and instead want to focus attention on the expansion of existing business and industrial concerns already located in the region and to encourage skilled persons who may have lost their jobs in the mines or elsewhere to enter into various entrepreneural enterprises through technical assistance and training programs.

The opportunity for greater flexibility in funding jobs and private investment projects will improve the potential for greater economic development within the region. The difficulty of getting a business or industrial prospect to make that final commitment has always been present. Yet, the availability of public facility funds can have considerable influence on those kinds of decisions. Under the revised criteria for distressed counties, 36 of Kentucky's 49 Appalachian counties will be so designated. This probably reflects the downturn in the coal industry and the resulting high unemployment in most of our Appalachian counties.

The Appalachian Regional Commission has been well recognized for its federal and state partnership and with the increased emphasis on participation by the governors in the decision making process, we believe the Commission will have an enduring future.

STATEMENT OF GOV. GUY HUNT OF ALABAMA

While I am a new Governor to the Appalachian Commission, I am fortunate to have lived in the Appalachian Region of Alabama and to have firsthand knowledge of the impact it has had in my own area.

In looking around on visits to all parts of the state I have noticed how the ARC Program has benefited the 35 ARC Counties of Alabama and, again from personal observation, I can see the need for a continuation of this attack on the problems specific to the region.

I believe that the Appalachian Region as a whole will benefit from the continued efforts to increase economic development, wipe out high unemployment, remedy the high school dropout rate, address the need for basic infrastructure for water and sewers for our people, and attack other injustices presently suffered.

The ARC Program is unique, we all agree, in achieving a true federal-state partnership. It has been a program truly beneficial to this state and its citizens. The program has indeed accomplished much but, unfortunately, there is much yet to be done. This is a proven way to help alleviate the remaining needs, and I strongly urge The Congress to approve continued authorization and funding for the Appalachian Regional Commission.

TEXAS WATER RESOURCE PROJECTS

STATEMENT OF HON. LLOYD BENTSEN, U.S. SENATOR FROM TEXAS

Senator DECONCINI. Senator Bentsen, you may proceed.

Senator BENTSEN. I will put my statement in the record. I assure you that these are all laudable projects, and my distinguished constituents here will explain them in greater detail.

Senator DECONCINI. Very good.

Senator BENTSEN. I want you to know, Mr. Chairman, I am pleased to be able to join with my constituents to ask this committee to support these water projects that they have come to discuss with you.

As you know from working with and hearing from them throughout the years, these officials that are going to testify before you are dedicated to improving the water quality and water services in their home districts.

Mr. Chairman, because of the limitations of time, I will put all of my statement in the record. But I want to thank you for your early commitment and recognition of the merits of these projects. Knowing how much water projects mean to you in Arizona, I hope you will look favorably on these projects. I am delighted to be with you now.

Thank you very much.

Senator DECONCINI. Thank you, Senator Bentsen. [Applause.]

[The statement follows:]

STATEMENT OF SENATOR BENTSEN

Mr. Chairman, members of the Committee, I am pleased to be able to join with my constituents today to ask this Committee to support the water projects they have come to discuss with you. As you know from working with and hearing from them through the years, the officials who will testify before you today are dedicated to improving the quality of water and water services in their home districts. They continue to work hard to do a good job in the face of declining federal support for their efforts. I hope that the Committee will see fit to continue the support for their projects. The President's budget includes a great many, if not most, of the projects these officials will comment on today. I certainly support the provisions in the President's request, and would hope that you will allso. Before I let the witnesses begin to apprise you of their specific needs, I want to just mention a few projects that continue to be of importance to my state.

The Mouth of the Colorado River Project on the Texas Gulf Coast is under construction. The Port of Bay City Authority is the local sponsor of this project, and I understand that representatives from that entity could not be here today. Their travel here is unnecessary, Mr. Chairman, because the Mouth of the Colorado River Project is not controversial. The Corps of Engineers has requested $2.2 million for continued construction of this project, and the Administration included this amount in its budget proposals. I would hope that the Committee will appropriate this amount of money to be used for construction purposes. I would like to see this project completed as expeditiously as possible, and the amount of the needed appropriation is small enough to remain within budget limits.

As will be fleshed out later by the representatives from the Trinity River Authority, I respectfully ask the Committee to support the requests of the Trinity River Authority. The Authority is seeking support for the Joe Pool Lake project, which is located in southeast Tarrant and southwest Dallas counties. The President's budget contains $9 million for construction and $293,000 for operation and maintenance. The Bedias Reservoir Project is a Bureau of Reclamation project for water supply in Madison, Walker, and Grimes counties. The President requested $600,000 in his budget proposal for general investigations into the feasibility of the project for the lower Trinity Basin and the upper Gulf Coast areas. I urge you to support this initiative.

I also want to renew my support for the Cooper Lake project in Sulphur Springs, Texas. I am delighted that the President's budget provides for $14 million in construction for the project.

I am also pleased to see that the Administration has included provisions for the construction of flood control projects at Clear Creek and Lake Wichita, Holdiay Creek, Texas, and the navigation project at Freeport Harbor. These projects were authorized in the Omnibus Water Resources bill last year. I would hope that the Administration will continue to support these projects.

Another project that was authorized in that bill, but not included in the Administration's budget is the Lower Rio Grande Basin flood control project for the Rio Grande Valley in Willacy and Hildago Counties. I am disappointed that this project has not received the support it deserves from the Administration, but I remain hopeful that some funding will be made avilable for it.

Once again I request that you earmark funds for the Wallisville Lake project. As you know, this beneficial project was authorized in 1962, and has been tangled up in court since 1973. I understand that the United States Court of Appeals for the Fifth Circuit heard arguments in the case in early February and may rule soon. If the injunction on the project is lifted, the Corps of Engineers has estimated that approximately $3.1 million would be needed to complete preliminary stages of construction. The Administration did not include a recommendation for this project in its budget request. The local sponsors -- the City of Houston, the Trinity River Authority, and the Chambers-Liberty Counties Navigation District -- are anxious about this project. If the court rules in favor of resuming construction of the project, the Corps will need to be in a position to begin work. I hope that you will once again earmark funds for this eventuality.

There are, of course, other projects worthy of support, among them are the Gulf Intracoastal Waterway, the dredging project for the Port of Corpus Christi, the Houston Ship Channel, and the Simms Bayou project in Houston. The value in these projects lies far beyond anything they might now cost. Mr.

Chairman, I think that this Committee has historically recognized this. Texas appreciates your Committee's efforts to make beneficial decisions regarding these projects. I would like to thank you again, Mr. Chairman, for allowing me to join with my constituents in support of Texas projects.

Senator DECONCINI. We will now take the testimony of the Honorable distinguished Congressman Jack Brooks, the chairman of Government Operations, who is also here.

We have kind of a crunch, Congressman Brooks, because a vote is coming up. You already have Senator Byrd's and my votes, and you have a vote at 2:35, so we will let you take just as long as you think it will take you to convince us to stick with you.

STATEMENT OF HON. JACK BROOKS, U.S. REPRESENTATIVE FROM TEXAS

Mr. BROOKS. My remarks won't take long. Listen, you are most gracious, Senator, you and Senator Byrd, the distinguished majority leader of the Senate. I thank you for the opportunity to appear. I will give you a copy of my statement; you can put it all in the record.

I support the funding of all items in the budget, and it is rare. I am not asking for anything else. You have never heard that before, Robert. You never heard it before. I am not asking for any additional add-ons to the budget. You should take it as is, and I am grateful to you.

The Taylor Bayou project is running well; Hillebrandt Bayou is running; Clear Creek flood control is running; Wallisville is still under injunction, but the judge's decision is under appeal, and if we get a favorable ruling, we will need to try and get some supplemental funding for that. I will be talking to you all and to the House side.

I appreciate your consideration. They are critical to our district. These petrochemical plants and heavy industrial operations are vital to our country. Our ports are vital to the country. These projects ensure the productivity and growth of that area to help remove the ever-present threat of flooding and its tragic effects.

INTRODUCTION OF SUPPORTING WITNESSES

I wonder, Mr. Chairman, if I could introduce the people that are here, briefly.

Senator DECONCINI. Please go right ahead, Chairman Brooks.

Mr. BROOKS. The commissioners from the county of Galveston, skinny Ron Crowder. His machine doesn't run over 250, and the boy is trying to reduce, and it hurts him; Commissioner Billy Jack Pegues, one of the best lawyers in the county; the county judge of Richardson County, Richard P. LeBlanc and his wife Cheryl; Commissioner Ed Moore and his nice wife Loretta; Commissioner Bill Kimbrough from the Port of Beaumont; Richard Busby, the secretary of Chambers-Liberty County Navigation District, and the vice chairman, Gordon Speer and Elaine Speer.

Clear Creek Drainage District Vice President Frank Frankovich; and Jefferson County Drainage District No. 6 President Sam Smith, Dorothy, and their pretty daughter Kimberly; the Vice President Robert Horn and Barbara Horn; Commissioner Josh Allen; General Manager Ronnie Platt; Norman Blackman and Mrs. Cathy Blackman; from Jefferson County Drainage District No. 7, Manager Tom Hogan; Commissioners Duffy Adair, Julian Coghill, and and his wife. His lovely wife phones for me. She is a gracious lady, Senator Byrd; and Commissioner Roy King.

I would like also to put in the record, with your permission, statements from the cities of Beaumont, Groves La Marque, Nederland, Port Arthur and Texas City; the counties of Galveston, Harris, and Jefferson; the ports of Port Arthur and Sabine Pass; and the chambers of commerce in Beaumont and Port Arthur; Beaumont Navigation District, Clear Creek Drainage Districts; Jefferson County Drainage District Nos. 3, 6, and 7, and the Transit Mix Concrete and Foundation.

With that, I want to thank you and tell you we love you; we appreciate your help. If you have got any questions, we will try and handle them, or people here will and jointly.

Senator DECONCINI. Chairman Brooks, thank you very much. We have no questions, and I can assure you of careful consideration of your testimony and all of the testimony throughout will appear without objection in the records.

[The statements follow:]

STATEMENT OF CONGRESSMAN JACK BROOKS

Mr. Chairman, I thank you for this opportunity to appear today to urge the subcommittee's favorable consideration of the public works projects for the 9th Congressional District of Texas included in the fiscal year 1988 budget.

Mr. Chairman, I support funding all of the items included in the budget proposal and in the interest of time will submit a list of them with my statement rather than discuss each one individually.

It is rare that I appear before you with no requests for additional funding for a new or existing project. However, your subcommittee has graciously acted upon my past requests and I am pleased to inform you that all of our projects appear to be proceeding on time and with no additional capability expressed by the Corps of Engineers.

I'm particularly delighted that our Taylor's Bayou drainage and flood control project, along with the Hillebrandt Bayou, is on track, and that after many years of planning and compromising and just plain hard work, our Clear Creek flood control project is under construction.

Mr. Chairman, as usual, I will make mention of the Wallisville saltwater barrier project. Regrettably, it is still under injunction. The judge's decision is under appeal. If a favorable ruling is issued before this appropriation bill is marked up, I may be requesting supplemental funding for it.

Mr. Chairman, again I appreciate your kind consideration. All of these federal public works projects are critical to the economic development of my district, with its many petrochemical plants and heavy industrial operations that are so vital to our country. Ports along the Texas gulf coast are an integral part of the economy of the nation. These projects insure the productivity and growth of that area and help to remove the ever-present threat of flooding and its tragic effects.

I have with me today a number of persons vitally concerned with these projects. They are here to support these statements and to answer any questions the subcommittee may have. I would like to introduce them at this time.

Crystal Beach, Mayor pro tem William Stirling; League City, Councilwoman Catherine Palermo and Don Palermo; Galveston County, Commissioners Ron Crowder and Billy Jack Pegues; Jefferson County, Judge Richard P. LeBlanc, Mrs. Cheryl LeBlanc, and Commissioner Ed Moore; Port of Beaumont, William R. Kimbrough, president, board of commissioners; Chambers-Liberty County Navigation District, Secretary Richard Busby, Vice Chairman Gordon Speer, and Mrs. Elaine Speer; and Clear Creek Drainage District, Vice President A. Frank Frankovich.

Jefferson County Drainage District No. 6, President Sam O. Smith, Mrs. Dorothy Smith, Kimberly Smith, Vice President/Secretary Robert Horn, Mrs. Barbara Horn, Commissioner Josh Allen, General Manager Ronnie E. Platt, Thad Heartfield, Mrs. Heartfield, Jennifer Heartfield, Norman Blackman, and Mrs. Cathy Blackman; Jefferson County Drainage District No. 7, Manager Tom Hogan, Commissioner M.J. "Duffy" Adair, Commissioner Julian Coghill, Mrs. Coghill, and Commissioner Roy M. King; cities of Beaumont, Groves, LaMarque, Nederland, Port Arthur, and Texas City; counties of Galveston, Harris, and Jefferson; ports of Galveston, Port Arthur, and Sabine Pass; chambers of commerce of Beaumont and Port Arthur; Beaumont Navigation District, Clear Creek Drainage District, Jefferson County Drainage Districts Nos. 3, 6, and 7, and Transit Mix Concrete and Foundation.

9TH DISTRICT, TEXAS PROJECTS—FISCAL YEAR 1988 FUNDING REQUESTS

[In thousands of dollars]

Project or study	President's FY 1988 budget	Corps' capability	Amount requested
Surveys:			
Hillebrandt Bayou and tributaries, Texas	$170	$170	$170
Preconstruction engineering and design:			
Texas City Channel, Texas	500	500	500
Construction:			
Clear Creek, TX	4,800	4,800	4,800
Taylor's Bayou, TX	3,700	3,700	3,700
Operations and maintenance:			
Cedar Bayou, TX	780	780	780
Chocolate Bayou, TX	1,180	1,180	1,180
Galveston Harbor and Channel, TX	8,820	8,820	8,820
Gulf Intracoastal Waterway, TX	8,034	8,034	8,034
Houston Ship Channel, TX	6,030	6,030	6,030
Sabine-Neches Waterway, TX	9,171	9,171	9,171
Wallisville Lake, TX	170	170	170

STATEMENT OF BEAUMONT, TEX.

In accordance with request from the Honorable Jack Brooks, Congress, 9th District, Texas, and on behalf of the city of Beaumont, we wish to make comments on three specific projects being considered in your fiscal year 1988 budget.

1. Hillebrandt Bayou and tributaries (survey)	$170,000
2. Taylors Bayou (construction)	3,700,000
3. Sabine-Neches Waterway (O&M)	9,171,000

The Hillebrandt Bayou and Taylor Bayou projects, when completed, will have a favorable effect upon our ability to alleviate flooding problems within the city of Beaumont. Approximately the western one-half of the city of Beaumont drains into the Hillebrandt Bayou and then to Taylors Bayou. Any enlargement to these facilities should have a favorable effect on our much-needed drainage improvements. Many of our current drainage problems, including house flooding and street flooding, are dependent on these projects to alleviate inadequate outfalls. The Sabine-Neches Waterway project is essential for the continued operations of the Port of Beaumont and shipbuilding industry.

Your favorable ruling on these projects is essential to the economic stability of the city of Beaumont, and I request that you continue to fund these projects.

Thank you.

RESOLUTION OF GROVES CITY COUNCIL, TEX.

WHEREAS, the Groves City Council supports the following public works projects that Congressman Jack Brooks will present before the House Committee on Appropriations and Senator Lloyd Bentsen will present before the Senate Committee on Appropriations for funding in the FY 1988 budget:

(a) Clear Creek (construction)	$4,800,000
(b) Galveston Harbor and Channel (operation and maintenance)	8,820,000
(c) Gulf Intracoastal Waterway (operation and maintenance)	8,034,000
(d) Hillebrandt Bayou and tributaries (survey)	170,000
(e) Houston Ship Channel (operation and maintenance)	6,030,000
(f) Sabine-Neches Waterway (operation and maintenance)	9,171,000
(g) Taylors Bayou (construction)	3,700,000
(h) Texas City Channel (engineering and design)	500,000
(i) Wallisville Lake (operation and maintenance)	170,000

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GROVES, TEXAS:

THAT this body does hereby go on record as wholeheartedly supporting the above projects for funding in the FY 1988 budget; and

BE IT FURTHER RESOLVED that a copy of this Resolution be furnished Congressman Jack Brooks, Senator Lloyd Bentsen, and members of the House and Senate Committees on Appropriations as evidence of the Groves City Council's support.

PASSED, APPROVED and ADOPTED this 23rd day of March, 1987.

STATEMENT OF LA MARQUE, TEX.

On behalf of the mayor and city council of the city of La Marque, Tex., we would like to take this opportunity to express the city of La Marque's unequivocal support of those projects listed below, which are included in the FY 1988 budget:

Texas City Channel (engn. and design)	$500,000
Galveston Harbor and Channel (O&M)	8,820,000
Gulf Intracoastal Waterway (O&M)	8,034,000
Houston Ship Channel (O&M)	6,030,000
Clear Creek (construction)	4,800,000
Sabine-Neches Waterway (O&M)	9,171,000
Taylors Bayou (construction)	3,700,000
Hillebrandt Bayou and tributaries (survey)	170,000
Wallisville Lake (O&M)	170,000

The project of primary importance to the city of La Marque is the Texas City Channel. We appreciate the opportunity for your consideration.

STATEMENT OF NEDERLAND, TEX.

This is to advise that the city of Nederland is situated in the 9th Congressional District, Tex., and recommends your consideration of FY 1988 budget appropriations for the following projects:

Project	*FY 1988 budget*
Clear Creek (construction)	$4,800,000
Galveston Harbor and Channel (O&M)	8,820,000
Gulf Intracoastal Waterway (O&M)	8,034,000
Hillebrandt Bayou and tributaries (survey)	170,000
Houston Ship Channel (O&M)	6,030,000
Sabine-Neches Waterway (O&M)	9,171,000
Taylors Bayou (construction)	3,700,000
Texas City Channel (engn. and design)	500,000
Wallisville Lake (O&M)	170,000

Your consideration of these recommendations is appreciated.

STATEMENT OF PORT ARTHUR, TEX.

GULF INTRACOASTAL WATERWAY (OPERATION AND MAINTENANCE)

The city of Port Arthur fully supports the request for $8,034,000 for operation and maintenance of the Intracoastal Waterway System.

Approximately 12 miles of the busiest part of this waterway is within the city limits of Port Arthur, and it plays a vital role in serving the major industry of this area.

The city of Port Arthur would like to go on record in support of this operation and maintenance.

SABINE-NECHES WATERWAY (OPERATION AND MAINTENANCE)

The city of Port Arthur would like to go on record for approval of the fiscal year 1986 funds, $9,171,000, as requested by our Honorable Congressman Jack Brooks.

The economic wellbeing of all citizens in southeast Texas and this Nation is dependent upon adequate deep water for the transportation of goods produced to serve our country. Ajpproximately 11 percent of the Nation's oil supply is handled in this area.

Your favorable action would be appreciated.

TAYLORS BAYOU (CONSTRUCTION)

The city of Port Arthur fully supports the request of Jefferson County Drainage District No. 6 for the fiscal year 1988 for $3,700,000 to plan for the construction of flood control on Taylors Bayou, which drains the largest watershed area in Jefferson County.

Serious drainage problems in Beaumont and in the extraterritorial area of Port Arthur have caused major damage by the flooding of this bayou. The flooding was caused by the normal development of the upper watershed area and heavy rains this past year.

The city of Port Arthur wishes to go on record in support of this flood control project and encourages you to approve funds for the continuation of this project.

STATEMENT OF TEXAS CITY COUNCIL, TEX.

On behalf of the city commission and the citizens of Texas City we sincerely request your support for adequate appropriations for the engineering and design of the Texas City Channel. The Port of Texas City handles over 41 million tons of shipping annually, the majority of which consists of raw and finished products from our multimillion-dollar petrochemical industries. The economic life of our community depends to a large degree upon the industries and the many supporting service and retail businesses. These significant channel improvements would most certainly reduce transportation costs into Texas City and tend to increase local capital investment and create new employment opportunity, thereby benefiting the overall local economy, which has been particularly hard hit these past few years.

We also support the Clear Creek construction project as the residents in the Clear Creek area have been flooded repeatedly because of heavy rainfall. The Clear Creek construction is absolutely essential in order to relieve the problem. The citizens of Galveston County passed a $4 million dollar bond program in November 1985, to provide its local share of the cost to this vital program that affects so many of our citizens.

We urge your support of the above projects and their inclusion in the FY 1988 budget. Should you have any specific questions pertaining to these projects, we will be most willing to cooperate in providing any information we have available for the use of your committee.

STATEMENT OF EL FRANCO LEE, COMMISSIONER, PRECINCT 1, HARRIS COUNTY, TEX.

CLEAR CREEK WATERSHED PROJECT FUNDING

I wish to submit this statement in testimony of my strong support for funding of the Clear Creek public works construction project. I write this letter not only on behalf of Harris County, but rather for all areas adjacent to Clear Creek, including Brazoria and Galveston Counties, all of which are critically dependent on this project's ultimate completion. these areas, some more heavily urbanized than others, are by virtue of location, heavily dependent on downstream improvements. Improvements that are so significant, they cannot possibly be accomplished without federal assistance.

The Clear Creek watershed comprises an area more than 260 square miles through the 18½-mile length of the project. Throughout this stretch there are 17 major tributaries entering Clear Creek. Whether in Galveston County, Harris County or Brazoria County, improvement of upstream reaches on these tributaries by local agencies impose a corresponding requirement for improvement of the principal receiving stream. Federal funding of Clear Creek provides the catalyst for these improvements.

A commitment to fund this phase, as well as completing the ultimate plan on Clear Creek, will have a significant effect on the socio-economic conditions of this heavily growth-oriented area. Additionally, it would impose a positive impact on the 19,000 acres below the Clear Creek flood level and the National Aeronautics and Space Administration facilities located within its influence regime. Considering these facts, we sincerely request your favorable considertion in funding this current project.

HOUSTON SHIP CHANNEL PROJECT FUNDING

Please permit me to express my strong support for the funding of the Houston Ship Channel public works maintenance project. The Houston Ship Channel is, by far, one of the most critical water courses in the gulf coast area. The ship channel not only has a major impact on flood management for several counties, but as the third largest port in the nation, its influence extends nationwide.

The importance of the Houston Ship Channel in watershed management is emphasized by the fact that only two streams in this region do not connect to the channel. All of the remaining 20 watersheds of this area, including the San Jacinto River, rely on the ship channel as a prime effluent source to the Gulf of Mexico.

As a commercial seaway its role is well known. The ship channel offers a principal link in trade between the gulf coast and the Far East, Asia and numerous other foriegn ports. It plays an undisputed role as a point of import and export of grain, bulk fuel, steel products, containerized cargo, and many other goods vital to this nation's economy.

The level of funding requested is certainly not significant, but it is critical to the ultimate needs of this principal waterway. I urge you to favorably consider approval of the requested appropriation.

STATEMENT OF JEFFERSON COUNTY COMMISSIONERS' COURT, TEX.

The Commissioners' Court of Jefferson County, Tex., would like to go on record in support of the following projects which pertain to Jefferson County. It is our understanding that the subcommittee hearings are scheduled for the afternoon of March 31, 1987.

(1) Gulf Intracoastal Waterway
(2) Hillebrandt Bayou and tributaries
(3) Sabine-Neches Waterway
(4) Taylors Bayou

It is our opinion that said projects should be included in the 1988 budget and these projects are vital to our area and are in the best interest of the citizens of Jefferson County.

STATEMENT OF BEN GOLDSTEIN, TEXAS

We respectfully ask that you favorably consider the public works funds request by our Congressman Jack B. Brooks for the operation and maintenance of the Sabine-Neches Waterway and the Gulf Intracoastal Waterway of Texas. Only minimally necessary funds are requested to insure the operation and maintenance of these vital federal waterways.

The major refineries on our Sabine-Neches Waterway annually produce a high percentage of America's energy fuels. The waterway handles up to 38,000,000 S/T of commerce, including import crudes, domestic and export shipments as well. The economic and military security of America depends on keeping these vital waterways open, now and in the future.

The Gulf Intracoastal Waterway of Texas is an indispensable connecting link between hundreds of chemical and petrochemical plants and other refineries, here and across the gulf coast. Combined plant investment of these essential industries exceeds $30 billion, just on the Texas segment of the Gulf Intracoastal Waterway alone, according to recent estimates.

No new construction is anticipated in these requests, and the funds appropriated are vital to our economy and national defense. Your favorable consideration is justified, we submit, and is respectfully requested.

STATEMENT OF BEAUMONT (TEX.) CHAMBER OF COMMERCE

Completion of the Taylors Bayou flood control project is vital to flood control in Beaumont and Jefferson County. Although the project already brings some flood control to a major portion of the county, including Beaumont, the full benefit of the project will not be realized until its completion.

Adequate flood control is essential before investors commit to new construction and development. These are just the activities essential to the economic recovery of southeast Texas. Therefore, we urge completion of the flood control project.

STATEMENT OF GREATER PORT ARTHUR (TEX.) CHAMBER OF COMMERCE

SABINE-NECHES WATERWAY

We, the board of directors of the Greater Port Arthur Chamber of Commerce, request approval of the $9,171,000 appropriation for the operation and maintenance of the Sabine-Neches Waterway for fiscal year 1987.

Our area is of significant importance to the nation bythe fact that more than 10 percent of the nation's refined petroleum products are transported through our complex of refineries. Today, refineries are relying more and more on larger and greater numbers of tankers to bring in vitally needed imported crude and to handle export and domestic shipments as well. We respectfully request your favorable consideration to the request for $9,171,000 for the operation and maintenance of the Sabine-Neches Waterway for fiscal year 1987.

TAYLORS BAYOU CONSTRUCTION PROJECT

We, the board of directors of the Greater Port Arthur Chamber of Commerce, request approval of the $3,700,000 appropriation for the Taylors Bayou construction project for fiscal year 1987.

This project dates back to 1946 and, as you well know, construction costs have soared since that time. We feel that this will benefit our community, not only from an economic standpoint, but also from a drainage standpoint. It is essential that drainage protection be provided for our area.

Therefore, we respectfully urge your committee to aprove funds proposed for fiscal year 1987.

GULF INTRACOASTAL WATERWAY

We, the board of directors of the Greater Port Arthur Chamber of Commerce, request your favorable consideration of the $8,034,000 appropriation for the operation and maintenance of the Gulf Intracoastal Waterway for the fiscal year 1987.

The Gulf Intracoastal Waterway of Texas is an indispensable link between area refineries, chemical and petrochemical plants, all of which are absolutely essential to the security, as well as the economical well being, of our nation today.

Few, if any, waterways in America contribute more to the American economy, to our strengthened relations with a peaceful world, and toward achieving a better balance of trade than the Gulf Intracoastal Waterway of Texas.

We, therefore, respectfully request your favorable consideration of this $8,034,000 appropriation.

STATEMENT OF JEFFERSON COUNTY DRAINAGE DISTRICT NO. 3, TEX.

Work on the Taylors Bayou drainage and flood control project has continued to progress for several years and during that period of time a great deal has been accomplished. The citizens and residents of this area are anxiously awaiting the day when we can say that the project has been completed.

Since work was commenced, the outfall channel for the project has been completed, the widening and deepening of the intercoastal waterway has been completed, and the saltwater barrier and seven saltwater intrusion gates have been installed. Phase I of the project is almost totally completed. It is of vital importance that phase II of the project be continued and finished as soon as possible in order to tie in the overall project so that flooding of the homes, residential areas, and vital farmland will no longer continue.

The Corps of Engineers has informed us that they are ready to go ahead with phase II and the $3.7 million allocated in the current proposed budget for the continued work on this project is of vital importance to the area.

Jefferson County Drainage District No. 3 is again requesting your support and assistance in having this amount included in the budget for the fiscal year 1988.

Statement of Jefferson County Drainage District No. 7, Tex.

We are enclosing 18 copies of each of our statements favoring the continued construction of the Taylors Bayou project for the Energy and Water Development hearings to be held in the House and the Senate on March 31, 1987.

As of this date, the following persons connected with Drainage District No. 7 plan to attend the hearings: Eugene Rasheta, chairman; Julian B. Coghill, Jr., commissioner, and Mrs. Coghill; Roy M. King, commissioner; M.J. "Duffy" Adair, commissioner; and Tom Hogan, manager.

Mr.Rasheta would like to have a brief meeting, if possible, with you on Monday, March 30, 1987.

Statement of D.P. Wheat, Jr., Chairman, Jefferson County Flood Control Project Committee, Tex.

Thank you for allowing me the opportunity to make this statement in support of the Taylors Bayou flood control project. I represent a citizens' committee which successfully passed a bond issue election in 1979 for $15 million as the major part of our local share of the project. Please consider the following:

1. Construction began in 1983 and phase I is complete.
2. The local sponsor is providing right-of-way and spoil areas for phase II in anticipation of construction funds being appropriated.
3. The project is bringing flood relief to over 600 square miles of Jefferson County and 75 percent of the area in the city limits of Beaumont.
4. Full benefits of the project will not be realized in the upstream areas of the city of Beaumont until the project is completed.

This fund request should be considered as an investment in the future of the petrochemical center of our nation. Further development in our area is hampered by inadequate drainage. I urge your support of this item in the appropriations bill for water development in Texas.

Statement of Jefferson County Drainage District No. 6, Tex.

Over the past several years the Taylors Bayou drainage and flood control project has been moving ahead with the acquisition of channel rights-of-way, the purchase of spoil disposal areas, the coordination of mitigation with environment agencies, and the widening and deepening of the main drainage channels. These efforts are to provide better drainage and flood relief to citizens living in the watersheds of this project.

This spring, phase I of the project will be put into operation and it is anticipated that a reasonable degree of flood relief will be realized by upstream residents. Phase II is well underway and with each section completed, additional benefits will be received.

This project would not be possible without federal assistance and the continuing efforts of our own Congressman Jack Brooks. The citizens of this area are indebted to the several congressional committees that review appropriations each year and have seen fit to continue funding for the Taylors Bayou project.

The funding level for fiscal year 1988 is $3.7 million. The district supports this request and urges you to approve it.

The district is also vitally interested in continued funding of a Corps of Engineers reconnaissance study of Hillebrandt Bayou and tributaries at a requested budget level of $170,000. This project, if proven feasible, would enhance drainage considerably in the upper watershed of the bayou and add measurably to the quality of life in the immedite area.

Additionally, the district also supports the funding requests for the Sabine-Neches Waterway (O&M) for $9,171,000 and the Gulf Intracoastal Waterway (O&M) for $8,034,000.

Your thoughtful consideration and approval of funding for these very important and beneficial projects is requested and appreciated.

STATEMENT OF BEAUMONT NAVIGATION DISTRICT OF JEFFERSON COUNTY, TEX

SABINE-NECHES WATERWAY

The Beaumont Navigation District of Jefferson County, Texas is the local sponsor of the Sabine-Neches Waterway as authorized by Congress.

The Sabine-Neches Waterway is a federally maintained navigation project extending from the Gulf of Mexico, through a jettied entrance at the mouth of Sabine Pass, inland to the deepwater ports of Port Arthur, Beaumont, and Orange, Texas, a total distance of approximately 84 miles. The project includes deep draft channels of the following dimensions; 42 feet deep and 800 feet wide across the Sabine Bank in the Gulf of Mexico; 40 feet deep and a varying width of 800 feet to 500 feet through the jetty channel; a depth of 40 feet and a width of 500 feet from the jetty channel to the Turning Basins at Port Arthur; a 40 foot depth and a 400 foot width from Port Arthur via the Sabine-Neches Canal and the Neches River to the Port of Beaumont; a 30 foot depth and a 200 foot width from mouth of Neches River upstream thru the Sabine River to the Port of Orange.

In addition to the above dry cargo ports, Mobil Oil Corporation, Texaco, Incorporated, Chevron, American Petrofina Company of Texas and Union Oil Company of California have located their major refineries along this ship channel. These five refineries have a total rated processing capacity of 1,176,000 barrels of crude oil per day. This is approximately 12% of the nation's refining capacity. A great majority of this crude oil is imported by tankers through this waterway and the ports and energy related industries along this channel have billions of dollars invested in pipe lines, tanks, wharves, docks and other plant installations.

A recent survey reveals that one of the major plants is about to complete a 40 million dollar energy expansion and modernization program and, another industry has initiated construction on a 50 million dollar expansion project. Plans for a 30 million dollar undertaking are being finalized and other industries are expected to locate in the area.

In addition to providing crude oil to the local refineries, Sun Marine Terminals also furnishes others with considerable oil. The Department of Energy has invested in excess of 35 million dollars in Sunoco's Neches River facilities, not including the cost of a pipeline to the Hackberry Strategic Reserve Salt Dome oil storage terminal, nor does it include the development of the Big Hill Storage Terminal, the construction of which is well underway. The majority of this commodity is foreign imported crude oil and the handling requires the use of many large tankers which congest this already extensively used ship channel.

All of the foregoing development is largely due to the existence of the Sabine-Neches Waterway, our area's life line to the world for its exports and imports.

This extensive and expanding complex comprises a critical basic energy related industry that is absolutely vital to the nation's economic and energy and defense needs. Their diminution for any reason would have a deleterious effect nationally as well as regionally.

The U.S. Corps of Engineers reported that, in 1984 (the latest figures available), the Sabine-Neches Waterway Ports of Beaumont, Port Arthur, Sabine Pass and Orange handled more than 50,000,000 tons of dry and liquid cargoes. The report also indicates that approximately 44,000,000 tons of Gulf Intracoastal Waterway traffic moved thru these channels. Shipping of this magnitude necessarily involves the use of a great many vessels which, of course, creates congestion on the waterway. To compound the problem the present size of the oil tankers, grain vessels and others cargo ships using this waterway are such that an even deeper and wider channel is needed at times, hence the importance of maintaining the waterway free of shoals.

Recent studies by the Corps of Engineers and complaints from the shipping industry reflect that there is continuous serious siltation and shoaling in the Gulf entrance channel at Sabine, and continuous extensive shoaling along several reaches of the inland channels. They find that these conditions will rapidly become worse, and, if not corrected, eventually the channel could be closed to deep sea navigaiton.

Correcting these conditions will decrease chances of collisions and groundings of the many hundreds of vessels carrying crude oil and refined products. Such occurrences, as stated by the Corps of Engineers in their environmental impact report "would result in adverse environmental impact and public health hazards". Failure to maintain the channel would result in severe adverse economic effects on the project area, the state and even the nation. Effects would include the loss of billions of dollars worth of facilities adjacent to the channel, loss of employment for thousands of people and disruption of the manufacture and transportation of a significant portion of the nation's "fossil fuel supply".

The Corps of Engineers' break down of the 9 million one hundred seventy-one thousand dollars included in the proposed budget for F.Y. 1988 will be utilized for dredging the following sections of the Sabine-Neches Waterway: Sabine Bank Channel; Sabine Pass Outer Bar Channel; Neches River Channel and the Channel at Sabine Pass.

As the sponsoring agency, Beaumont Navigation District stands ready to provide all needed disposal land areas, rights-of-way, relocations and confining structures for this project.

The District, representing the above mentioned many ports, refineries, grain elevators and other shippers using this Waterway, supported by our Congressman, the Honorable Jack Brooks, respectfully request your favorable consideraion for the inclusion of 9 million one hundred seventy-one thousand dollars in the F.Y. 1988 budget, in order that this badly needed work may be accomplished.

TAYLORS BAYOU

The Beaumont Navigation District, as one of the sponsors of the Taylors Bayou Drainage and Flood Control Project, is also responsible for the operation of the Navigation and Salt Water barrier gates near the mouth of Taylors Bayou.

Over a forty year period we have been in a position to observe the numerous artifical changes in the area that have adversely affected drainage of this stream.

The first set of existing gates were installed in 1937 and functioned as salt water barriers, not as flood gates. Later the J. D. Murphee Wildlife Management Area was created by constructing a system of levees along Taylors Bayou and the Intracoastal Canal restricting the natural course of flood waters across the wetlands into the Intracoastal and thence to the Gulf. Then in 1972, the Rhodair Gulley, Lakeside and Alligator Bayou pump stations of the Port Arthur Hurricane Protection System were installed. These pumps have a combined capacity of over two million gallons per minute and discharge into the lower reach of Taylors Bayou just above and below the salt water gates. These pumps operate during periods of flooding, raising the level of the Bayou which backs water up into homes and streets of Beaumont. State highway 73 running from Port Arthur west to Winnie is yet another obstruction to the traditional flow of water from the developed section of Beaumont toward the Gulf. During a rain of any magnitude, a one to three foot differential builds up on the North side of this highway, holding water on the developed areas of North Jefferson County.

Construction on Phase I is almost complete. The Outfall Canal, the Diversion Channel and the Gulf-Intracoastal Waterway have been dredged, and, the Salt Water Barrier is now complete. Therefore, it is important that sufficient funds be provided to continue this urgently needed work before more costly damages are inflicted on the home owners and the businesses of our community.

As one of the sponsoring agencies, Beaumont Navigation District stands ready to meet its commitments to furnish its share of the local assurances required.

The District, representing the people and industries of this district, and supported by our Congressman, the Honorable Jack Brooks, respectfully request that 3 million seven hundred thousand dollars be included in the F.Y. 1988 budget, in order that this highly important work be continued.

STATEMENT OF CLEAR CREEK DRAINAGE DISTRICT, TEXAS

THE CLEAR CREEK DRAINAGE DISTRICT OFFERS THIS STATEMENT IN SUPPORT OF THE U. S. ARMY CORPS OF ENGINEERS' CLEAR CREEK (TEXAS) FLOOD CONTROL PROJECT WITH THE REQUEST FOR CONTINUING CONSTRUCTION FUNDING IN FY-1988.

The Clear Creek Flood Control Project is an absolute necessity to the health, safety, and well-being of the people who live in the Clear Creek watershed. As the land in the watershed has undergone development, pastures and farmland have been converted to parking lots, streets, runways, buildings, and other surfaces from which rain water runs off extremely rapidly. Although there have been, and continue to be, improvements made to drainage arteries in the region by local agencies, consistent with their resources, and although storm water run-off and flood plain control has been in effect in the counties of the Clear Creek watershed since 1979-80, the effects of land development and subsidence have already reached the point that Clear Creek simply cannot carry storm water away to Galveston Bay fast enough to keep water out of our homes. So, until Clear Creek is improved in its water handling capacity, we do not have the ability to make substantial improvement to the flood hazards that our citizens are living with every day.

People here realize that it is not feasible to prevent flooding by a storm like Claudette which struck this area in July, 1979, and dropped 30-40 inches of rain on us in a two-day period. However, our people are getting water in their homes when much less spectacular rains occur — five-year to ten-year frequency precipitation is causing flooding. Even those people who are not getting water in their homes are impacted: street flooding is so severe that emergency vehicles cannot get through. A fire or serious medical problem occuring during, or for many hours after, such rains, would go unanswered in many places.

The Corps of Engineers has devised a plan for improving Clear Creek that is economically sound (benefit to cost ratio of 2.6), environmentally acceptable, and will completely contain the watershed run-off for a ten-year frequency storm. Furthermore, the 100-year flood plain will be reduced by 25% overall in the watershed, and by as much as 75% in some portions of the watershed. We fervently hope that appropriation of construction funds will again be approved and included in the FY-1988 Budget. The project is not frivolous, nor a convenience type of improvement—it deals with people's safety and health, both physical and psychological. Many of our people fear rain; anxiety levels run very high when a heavy rain lasts more than a couple of hours, expecially when water starts to rise in the streets and into people's yards!

Gentlemen, we NEED the Clear Creek Project and respectfully request that the additional construction funding of $4.8 million be included in the FY-1987 Budget.

RESOLUTION NO. 87-1

A RESOLUTION ENDORSING THE U. S. ARMY CORPS OF ENGINEER'S CLEAR CREEK FLOOD CONTROL PROJECT, STATE OF TEXAS: AND URGING THE UNITED STATES CONGRESS TO CONTINUE CONSTRUCTION FUNDING OF THE PROJECT IN THE FY-88 BUDGET.

WHEREAS, the Clear Creek Watershed includes portions of Galveston County as well as parts of Harris County and Fort Bend County, and

WHEREAS, a serious flood problem exists in the Clear Creek Watershed where existing residential and commercial areas are subject to extensive damages from rising waters in Clear Creek and its tributaries, and

WHEREAS, the Clear Creek Drainage District is the agency responsible for flood control in those portions of Clear Creek and its tributaries within its District, and

WHEREAS, the taxpayers of the District made a substantial committment in 1982 to the concept of self-help by voting an increase in taxes for flood control, and

WHEREAS, in spite of the increased taxes, the amount by which the flood hazard in the District can be reduced without a major project to increase the flow capacity of Clear Creek is severely limited, and

WHEREAS, the scope of the work required to achieve the necessary improvements on Clear Creek requires the extensive technical/management resources that the Corps of Engineers can provide, and

WHEREAS, the cost of the improvements needed on Clear Creek far exceeds the financial capabilities of local entities, and

WHEREAS, the benefits of the Corps of Engineers Clear Creek Project would include substantial reductions in claims against the National Flood Insurance Program, and

WHEREAS, the residents in the District continue to experience economic loss as a result of unnecessarily frequent flooding, and

WHEREAS, the residents of the District continually suffer extreme mental anguish because of the frequent threat of flooding, as well as the flooding itself, and

WHEREAS, the Clear Creek Drainage District, within the limits of its resources, and with the cooperation of other local governmental agencies, as well as individual citizens who have donated their time and labor, has been clearing debris and executing structural improvement projects in the creeks to increase their capacity, and

WHEREAS, the U.S. Army Corps of Engineers has designed a cost effective flood control project as authorized by the United States Congress which will provide a significant measure of protection from recurring flooding problems in the Clear Creek Watershed, and

WHEREAS, Congress approved $8 million to start construction of the Clear Creek Flood Control Project in the federal budget for fiscal year 1987, and

WHEREAS, delays will significantly increase the cost of the project as well as the probability of additional flooding, now, therefore

BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF THE CLEAR CREEK DRAINAGE DISTRICT OF GALVESTON COUNTY:

THAT the District reendorse the U. S. Army Corps of Engineers Clear Creek Flood Control Project, and

THAT the District urge the Congress of the United States to recognize that the Corps of Engineers Clear Creek Project is not a mere convenience item, but is absolutely necessary in order to restore the quality of life of thousands of people to a reasonable condition that they have every right to expect, and

THAT the District urge the Congress of the United States to approve the $4.8 million necessary to continue funding for construction of the project in the FY-88 budget, and

THAT the District urge the Congress to take whatever additional action is necessary to expedite the project and thereby reduce the emotional, physical, and economic suffering due to flooding.

PASSED, APPROVED, AND ADOPTED THIS 17th DAY OF MARCH, 1987.

STATEMENT OF GALVESTON COUNTY, TEX.

Dear Senator Johnston and Members of the Subcommittee:

Galveston County has been the local sponsor with the U.S. Corps of Engineers for the construction of various flood control projects in Galveston County since the first seawall was started in Galveston shortly after the 1900 Hurricane. The Galveston seawall has now been extended in length to approximately 10 miles protecting the most populated part of the City of Galveston.

In 1962 (some 14 years after the first local bond issue was passed), construction began on the seawall protecting the cities of Texas City and La Marque from the ravages of hurricanes and high tides of Galveston Bay. In addition, flood control projects have been initiated to prevent flooding along Highland Bayou in the cities of Hitchcock, Santa Fe, and La Marque, a project on which construction started in 1974 and was completed in 1982, and along Clear Creek in the cities of League City and Friendswood in cooperation with Harris County and Brazoria County Drainage District No. 4, although no construction has yet begun. Galveston County is also the local sponsor for a re-study of the flooding problems on Dickinson Bayou, a bayou which flooded 1,000 homes in 1979.

We appear before this Honorable Committee to urge your support for appropriations for one of these projects in Galveston County. We are specifically requesting appropriations for construction on Clear Creek, which is now ready for construction.

CLEAR CREEK FLOOD CONTROL PROJECT

The Galveston County Commissioners Court respectfully urges the Honorable Committee to approve $4,800,000 in construction funds for the Clear Creek Flood Control Project. These funds are included in the Administration's budget, and the U.S. Corps of Engineers is now ready to let a contract for the first phase of this project in FY 1987.

It is extremely important that the Clear Creek Flood Control Project begin construction in fiscal year 1987 and continue in FY 1988 with the funds recommended by the Administration. After approximately 15 years of planning, the Corps of Engineers made final engineering decisions on this project in 1983 and has completed detailed engineering design for the first phase which is from Clear Lake to just west of Highway 3. The Design Memorandum has been submitted to the Division Office of the Corps of Engineers and has been approved for construction. This project is designed to provide flood relief for over 500,000 people in the Clear Creek watershed in Galveston, Harris and Brazoria counties. It was also designed in such a way as to protect the sensitive environment of Clear Creek, and this decision received overwhelming public support in a January, 1982, public hearing. The two remaining local sponsors, Galveston County and Harris County, support the Corps of Engineers design which will accommodate a 10-year flood with the remainder of the 100-year flood plain to be protected by flood plain management.

In 1979, over 2,000 homes in Friendswood and League City along Clear Creek were flooded twice, in July from Tropical Storm Claudette and again in September. Several thousand homes were also flooded in Brazoria and Harris counties. Losses from flooding in these three counties from the 1979 floods were well over $200,000,000. People are desperate to do something--almost anything--on Clear Creek, and the Corps of Engineers is trying to expedite this project.

Inasmuch as the Clear Creek Flood Control Project has been in the study and design stage for over 17 years (authorized in 1968), it is most urgent that construction start as soon as possible. The study has been a high priority by the Corps of Engineers and over $2,500,000 has already been spent.

It would be disastrous to the people along Clear Creek if construction on this project does not begin after all of the time, effort, and money spent in detailed studies. We sincerely hope you will approve $4,800,000 in construction funds for FY 87 for the first phase of the project. Galveston County passed a $5,000,000 bond election in November, 1985, to provide its local share of the cost. Thus, we are ready, willing, and able to assume our local responsibility for this project. Galveston County, Harris County, and the U.S. Army Corps of Engineers signed the contract committing all parties to this project on June 30, 1986, on the Highway 146 high above Clear Creek, the boundary between Galveston County and Harris County.

Thank you for your consideration of these requests and for your time in allowing us to be present at these hearings. We stand ready to assist you in any way and to furnish any additional information you may require.

OHIO WATER PROJECTS

STATEMENT OF HON. HOWARD M. METZENBAUM, U.S. SENATOR FROM OHIO

Senator DECONCINI. Senator Metzenbaum, as I explained to Senator Bentsen and to Congressman Brooks, you have the support and the votes of this Senator and Senator Byrd for your projects. So as you understand it, we have votes coming up on the floor shortly. If you will summarize your testimony, we will proceed.

Senator METZENBAUM. Knowing that I have your vote and Senator Byrd's vote is a very persuasive and convincing reason why I should not speak at length. Mr. Chairman, I am pleased to have this opportunity to testify before the Energy and Water Subcommittee. I want to speak in behalf of four small proposed projects in my own state of Ohio: the Maumee Bay shoreline stabilization project; the Sheffield Lake small navigation project; Century Park beach erosion project; and the Ohio River waterfront study.

As a matter of fact, Congress earmarked funds for all four of these projects in a report of the conference accompanying the 1987 Continuing Appropriations Resolution. However, the administration refuses to allocate the funds.

With respect to Maumee Bay, the Assistant Secretary of the Army for Civil Works, Mr. Dawson, informed me in a letter that because the project provides primarily recreation opportunities it is, "not in agreement with the administration's budget priorities and policy to rely on the private sector to provide public services wherever possible."

He further indicated that he did not intend to fund the project. The Assistant Secretary did not refer to the other three projects, but I presumed the rationale was the same.

I then learned that there were many other projects throughout the country facing similar circumstances. The administration was attempting to kill them by administrative order in clear defiance of congressional intent, as shown in the continuing resolution report.

I think the Assistant Secretary was overstepping his bounds. I have an exchange of correspondence with him. He went on to reply to me in March of this year, in which he said:

> Because our policy toward primarily recreation projects has been tested and affirmed by the administration many times during recent years, the Department of the Army al-

lots funds to such projects only when the funds are included in appropriation act language.

I thank the Secretary for that bold and clear statement of administration policy, which is, if Congress wants a project funded, it should take care to insert specific legislation in the appropriations bill, period.

But the fact of the matter is that the Office of Management and Budget, or whichever agency is actually calling the shots on this matter, is being just a bit disingenuous.

The Water Resources Development Act of 1986, which was signed by the President a few short months ago, embodied new policy guidelines developed by the administration in conjunction with the Senate Republican leadership. Those guidelines affirmed the federal interest in recreation and shoreline erosion projects and guaranteed that the federal government would pay 50 percent of the cost of constructing such projects. That was the policy that the President signed into law November 17, 1986.

Mr. Chairman, we are not talking about much money, we are talking about peanuts. These four Ohio projects will cost the federal government a grand total of $750,000 this year, less than $1 million.

The state of Ohio and local governmental sources are prepared to provide the matching nonfederal funds, in some instances, 50 percent or more. All four are worthy projects that have passed the Corps of Engineers' feasibility requirements. All four were earmarked funds in the continuing resolution report.

I hope that the committee will see fit to include funds for them in the supplemental appropriations bill. Mr. Chairman, I very much appreciate your taking the time to give me an opportunity to explain the issue with respect to these four projects.

Senator DECONCINI. Senator Metzenbaum, I compliment you for coming here, and I agree with you completely. I am familiar with the language the committee included in the Continuing Resolution for Fiscal Year 1987 on these four Ohio projects. I know too well how frustrating it must be for you to be representing the state of Ohio have Congress earmark funds and then have the administration refuse to act. It is beyond comprehension. I can just assure you this Senator will do all he can to write the bill so they have no choice.

As you know, I have always supported Corps projects and reclamation projects and I intend to see that justice is done to your state.

Let me ask you this one question so the record is clear. What you are telling us is that the administration is proposing not to spend funds that the Congress earmarked for the Ohio River water development study and the others and they have not provided you with any explanation as to why these funds are not being released; is that correct?

Senator METZENBAUM. That is correct.

Senator DeConcini. And you have made such inquiry and they refuse to answer you?

Senator METZENBAUM. That is correct.

Senator DECONCINI. Thank you. You make a case for this Senator, I can tell you.

Senator METZENBAUM. Thank you very much, Mr. Chairman.

[The statement follows:]

STATEMENT OF SENATOR METZENBAUM

Mr. Chairman, I am pleased to have this opportunity to testify before the Energy and Water Subcommittee today. I want to speak in behalf of four small proposed projects in my own state of Ohio—the Maumee Bay shoreline stabilization, the Sheffield Lake small navigation project, the Century Park beach erosion project, and the Ohio River waterfront study.

Congress earmarked funds for all four of these projects in the report of the conference accompanying the 1987 Continuing Appropriations Resolution. However, the administration refuses to allocate the funds.

With respect to the Maumee Bay project, the Assistant Secretary of the Army for Civil Works, Mr. Dawson, informed me in a letter that because the project provides primarily recreation opportunities, it is, "Not in agreement with the administration's budget priorities and its policy to rely on the private sector to provide public services whenever possible." He further indicated that he did not intend to fund the project.

The Assistant Secretary did not refer to the other three Ohio projects, but I presumed the rationale was the same. I then learned that there were many other projects throughout the country facing similar circumstances—the administration was attempting to kill them by administrative order—in clear defiance of congressional intent as shown in the CR report.

I believe that the Assistant Secretary was overstepping his authority. Congress, not the administration is responsible for determining spending priorities. On February 17, 1987, I wrote to Mr. Dawson reminding him of this fact, and urged him to release the funds earmarked by Congress.

Mr. Dawson responded on March 19, 1987. He said, "Because our policy toward primarily recreation projects has been tested—and affirmed by the administration—many times during recent years, the Department of the Army allots funds to such projects only when the funds are included in appropriation act language."

I thank the Assistant Secretary for this bold and clear statement of administration policy, which is—if Congress wants a project funded, it should take care to insert specific legislation in the appropriations bill. Period.

But the fact of the matter is, the Office of Management and Budget, or whichever agency is actually calling the shots on this matter, is being just a bit disingenuous.

The Water Resources Development Act of 1986, which was signed by the President a few short months ago, embodied new policy guidelines developed by the administration in conjunction with the Senate Republican leadership. Those guidelines affirmed the federal interest in recreation and shoreline erosion projects, and guaranteed that the federal government would pay 50 percent of the cost of constructing such projects. That was the policy that the President signed into law November 17, 1986.

Mr. Chairman, we are not talking about much money. These four Ohio projects will cost the federal government a grand total of $750,000 this year.

—$250,000 of that would complete engineering and design of the Maumee Bay shoreline stabilization. The state of Ohio is fully committed to this project, and has already spent $3.2 million there.

—$200,000 would help to build a breakwater for a boat ramp project in Sheffield Lake. The state considers this project a most important economic development priority, and has committed $368,000 for it this year.

—$100,000 would go to restore the bathing beach at Century Park in Lorain, Ohio. The required 50 percent local cost share is in place and awaiting the release of federal funds.

—$200,000 would be spent on a study of development along the Ohio River. The administration has not even indicated why these funds are being held.

All four are worthy projects that have passed the Corps of Engineers feasibility requirements. All four were earmarked funds in the continuing resolution report. I hope that the committee would see fit to include funds for them in the supplemental appropriations bill.

Again, I appreciate having the opportunity to testify today.

ADDITIONAL STATEMENTS FROM MEMBERS OF CONGRESS

Senator DECONCINI. Before calling the next witness, I have several statements which have been submitted by various Members which I want to make part of the record.

[The statements follow:]

STATEMENT OF SENATOR JESSE HELMS

Mr. Chairman, thank you for giving me the opportunity to testify before your Subcommittee. I recognize the tremendous responsibility that is placed upon you and the other members of the Subcommittee. I hope that my testimony will assist you in making some of the difficult decisions that you will face in the coming weeks.

My testimony concerns a project that is critical to the state of North Carolina: the construction of Randleman Dam. The Army Corps of Engineers has yet to develop an official economic evaluation for this project, but local, state, and Corps personnel estimate that the Corps can efficiently and responsibly spend $8.1 million in the upcoming fiscal year.

Last year, in H.J.Res. 738, Congress appropriated $2 million in start-up funds for Randleman Lake for FY87. To date, $50,000 have been released for the economic evaluation of the project.

After giving a brief history and description of the project, I will point out why it is critical that Congress continue its commitment to this vital project.

HISTORY

Mr. Chairman, the Randleman Lake Project was authorized by Congress in 1968. It is a multipurpose project for flood control, water supply, and recreation which will be constructed on the Deep River, about two miles upstream from the Town of Randleman, North Carolina. The project will require about 10,000 acres of land -- 7500 acres in Randolph County and 2500 in Guilford County.

Since planning on this project first began over twenty years ago, important steps have been taken on the State and federal levels toward its implementation. The U. S. Army Corps of Engineers has spent more than $6 million on environmental studies, real estate surveys, and engineering for the project. The North Carolina Department of Transportation has spent $387,000 to relocate U.S. 220 to make it compatible with plans for the lake. Local governments have agreed to finance the Piedmont Triad Regional Water Authority in the amount of $165,000 this year to plan for the distribution and treatment of the water. Finally, the Committee on Economic and Natural Resources in the North Carolina General Assembly has favorably reported a bill which earmarks $2 million for the project in fiscal year 1988.

Let me briefly discuss some of the problems the state has in the areas of flood control, water supply and recreation that make it essential that Congress not abandon its commitment to this project.

FLOOD CONTROL

The Randleman Dam project will provide a substantial degree of flood protection to commercial, residential and agricultural property in the State. Flooding along the Deep River has periodically damaged property and caused severe economic losses. Average annual flood damage along the Deep River is estimated to be $600,000 (1985 dollars).

Flood waters from the Deep River also contribute to flooding downstream along the Cape Fear River, where average annual damages are estimated to be $800,000 (1985 dollars). The Randleman project would reduce the average annual flood damages along the Deep River by about 53%. The State is committed to pay 35% of the flood control costs of the project.

RECREATION

The project will offer a variety of publicly owned and managed recreation facilities. Recreation needs in the project area have been studied by the Research Triangle Institute, by the North Carolina Department of Natural Resources and Community Development's Division of Parks and Recreation, and by the U. S. Army Corps of Engineers. All of these studies conclude that the five county area around the proposed project is deficient in public outdoor recreation opportunities. Randleman Lake will provide high quality outdoor recreation facilities. The availability of a high quality outdoor recreation site such as this will be a key element in attracting desirable industry to the area and cultivating economic development, thus increasing the State and Federal tax base. The State will contribute 50% of the recreation costs of the project.

WATER SUPPLY

In 1984, six local governments funded an independent, exhaustive engineering appraisal of the water problems facing the region. The study was conducted by the prestigious consulting firm, CH2M HILL. Of the 40 water alternatives evaluated, Randleman Lake was determined to be the most feasible and desirable alternative to meet regional water supply needs. The study also made the alarming projection that water supplies will be exhausted in Randolph County as early as 1991, in Archdale County by 1994, in the City of Greensboro by 2000, and in the Cities of Jamestown and High Point by 2008.

Mr. Chairman, prompt implementation of this project is critical in North Carolina. State, local and federal representatives have reached agreement on both the merits of the project and the cost-sharing arrangement. Because of the importance of the project to North Carolina, State and local governments have agreed to pay approximately 69% of the total costs of the project.

Mr. Chairman, while we await a more detailed capability study by the Corps, I urge the Subcommittee to recommend an appropriation of $8.1 million for the Randleman Lake project in fiscal year 1988.

Thank you, Mr. Chairman.

STATEMENT OF SENATOR TERRY SANFORD

Mr. Chairman:

I would like to express my strong support for the Randleman Lake project in Randolph and Guilford Counties, North Carolina. The project is essential to meeting flood control, water supply, and recreational needs in the five-county area of the Deep River Basin.

Randleman Lake is expected to provide almost $600,000 per year in flood control benefits along the Deep River, and will also contribute to stabilizing flows downsteam in the Cape Fear Basin. The lake will also provide significant recreational benefits to the area, including fishing, boating, swimming, hiking, camping, and picnicking. Studies by the Research Triangle Institute, North Carolina's Division of Parks and Recreation, and the Corps of Engineers have all shown severe deficiencies in the outdoor recreational facilities of this area. Lower income residents of Greensboro/ High Point will in particular be well-served by the convenient location of Randleman Lake.

The project will also meet critical water needs for Guilford and Randolph Counties. Well over 400,000 people now live in these two fast-growing counties, and currently available water supplies will soon be exhausted. A 1985 study by the CH2M Hill engineering firm concluded that additonal supplies are already needed in the town of Randleman, and supplies will be exhausted in Randolph County by 1991, in Archdale by 1994, in Greensboro by 2000, and in High Point and Jamestown by 2008. The study also concluded that Randleman Lake was the best alternative for providing necessary supplies in the long term. If these communities are to meet their needs and continue to attract new businesses, lake construction must begin as soon as possible.

The need for Randleman Lake has been recognized for over twenty years now. The project has been authorized since 1968, and was included in the President's budget in 1983, 1984, 1985, and 1986. The 1986 drought underscored the urgent need of local communities for the project, Randleman and Archdale ran dry and Greensboro experienced severe water rationing. Subsequently, Congress finally appropriated some $2 million to commence construction in FY87, but OMB has released just $50,000 for economic reanalysis to date.

The State of North Carolina and all local municipal and county governments strongly support the project, and are committed to full financing of their share of construction and maintenance costs. The ultimate non-Federal cost will be $92 million of the $134 million total, and the willingness of State and local governments to provide such substantial funds over the next eight years highlights their commitment to Randleman Lake. A bill appropriating $14.2 million over the next two years for construction has unanimously passed the State Senate's Natural and Economic Resources and Wildlife Committee, and should soon be acted upon by the General Assembly as a whole.

I urge that the Subcommittee on Energy and Water Development appropriate $8.1 million for FY88, so that construction of Randleman Lake may proceed on schedule. Such an appropriation is essential to solving critical water problems in North Carolina. North Carolinians have long been willing to pay the majority of the costs, and this long-delayed, much-needed project can finally go forward with a modest Federal contribution.

STATEMENT OF U.S. REPRESENTATIVE WILLIAM H. NATCHER OF KENTUCKY

MR. CHAIRMAN, AGAIN, WE WANT YOU TO KNOW THAT WE APPRECIATE THE OPPORTUNITY TO APPEAR ON BEHALF OF THE PROJECTS IN KENTUCKY.

KENTUCKY HAS MORE MILES OF NAVIGABLE STREAMS THAN ANY OTHER STATE IN OUR COUNTRY WITH THE EXCEPTION OF ONE, AND ALL DOWN THROUGH THE YEARS, WE HAVE SUFFERED DAMAGES FROM FLOODS AND LOSS OF LIFE.

I WANT TO THANK YOU AND THE MEMBERS OF YOUR COMMITTEE FOR YOUR ASSISTANCE ALL DOWN THROUGH THE YEARS. WHEN WE HAVE BEEN ABLE TO AUTHORIZE OUR PROJECTS AND ESTABLISH THE PROPER BENEFIT COST RATIO, WE HAVE ALWAYS RECEIVED EVERY CONSIDERATION FROM YOU AND THE MEMBERS OF THIS COMMITTEE.

IN THE DISTRICT THAT I REPRESENT, WE HAVE COMPLETED AND HAVE IN OPERATION FIVE RESERVOIRS; ROUGH RIVER, NOLIN RIVER, BARREN RIVER, GREEN RIVER AND TAYLORSVILLE LAKE. ALL OF THESE PROJECTS HAVE PRODUCED MANY BENEFITS, NOT ONLY FOR THE PEOPLE IN KENTUCKY, BUT FOR ALL OF THOSE IN THE OHIO RIVER VALLEY.

MR. CHAIRMAN, AS YOU KNOW, SOME $830,000 HAS BEEN EXPENDED ON THE CAMPGROUND LAKE PROJECT IN MY DISTRICT, BUT SO FAR, THE COMMONWEALTH OF KENTUCKY HAS FAILED TO JOIN WITH THE CORPS OF ENGINEERS ON THIS PROJECT. THERE IS NOTHING FURTHER THAT YOU AND THE MEMBERS OF YOUR COMMITTEE CAN DO AT THIS TIME, BUT I DO HOPE THAT THE NEXT TIME WE APPEAR, KENTUCKY WILL HAVE DECIDED TO JOIN WITH US ON THE PROJECT SO THAT WE CAN PLACE IT UNDER CONSTRUCTION.

IN THE BUDGET FOR FISCAL YEAR 1988, IN ADDITION TO OPERATION AND MAINTENANCE, WE HAVE ONE ITEM OF $1,300,000 FOR CONSTRUCTION AT THE TAYLORSVILLE LAKE. THIS PROJECT HAS BEEN IN OPERATION NOW FOR SEVERAL YEARS AND KENTUCKY HAS JOINED WITH US ON THE RECREATION PROJECTS AND PROGRAM GENERALLY. THIS $1,300,000 WILL

BE THE MATCHING PORTION OF THE CORPS OF ENGINEERS ON PROJECTS INCLUDING ADDITIONAL RAMPS AT THE TAYLORSVILLE LAKE. I RESPECTFULLY REQUEST THAT THIS ITEM BE APPROVED AS IT APPEARS IN THE BUDGET WHICH WAS SUBMITTED IN JANUARY OF THIS YEAR.

I JOIN WITH ALL OF MY COLLEAGUES FROM KENTUCKY IN THE HOUSE AND IN THE SENATE IN THEIR REQUESTS FOR OUR STATE AND THEIR DISTRICTS.

AGAIN, MR. CHAIRMAN, I WANT TO THANK YOU AND THE MEMBERS OF YOUR COMMITTEE FOR PERMITTING US TO APPEAR AT THIS TIME IN BEHALF OF THE KENTUCKY PROJECTS.

TRINITY RIVER BASIN PROJECTS

STATEMENT OF JOHN STEVENSON, CHAIRMAN, TRINITY IMPROVEMENT ASSOCIATION

ACCOMPANIED BY:

MIKE CUMMINGS, PRESIDENT, TRINITY RIVER AUTHORITY
MARK CHU, COUNCILMAN OF THE CITY OF DENTON
GREG PATTON, PRESIDENT, JOE POOL LAKE PLANNING COUNCIL

Senator DECONCINI. Next, we will hear the testimony from the Trinity Improvement Association, John Stevenson, chairman.

Mr. Stevenson, you have a number of people who want to testify with you. You may bring them forward. I must advise you that the vote that was to start at 2:30 has been postponed for a very short period of time. Once it does commence, this Senator is going to have to leave.

Mr. STEVENSON. We understand, Mr. Chairman.

Senator DECONCINI. I suggest that your full statement, which I have here in front of me, will appear in the record, and all those statements of your colleagues. If you would like to summarize it, I will try to get as far along as we can.

Mr. STEVENSON. Thank you, Mr. Chairman; I understand the time constraints. My name is John M. Stevenson of Fort Worth, Tex., and I am the chairman of the Trinity Improvement Association. You have heard some brief testimony from our congressional representatives concerning some of our needs. I have been asked to serve as spokesman for this delegation, which numbers about 65 persons.

We represent interests from throughout the Trinity River of Texas. We are here to present some initial testimony and support of water projects that we feel are very vital to our area. The delegation includes a former Member of Congress, county commissioners, mayors, council members, chambers of commerce, officials, et cetera, and they come from 15 different cities located in the upper, middle, and lower reaches of the river, and from Houston, which is outside the basin, but receives water from the Trinity River.

I might add that the delegates have traveled here at their own expense with our association serving as the coordinator of this project. The water group is diverse geographically. Are united in our purpose.

I would like to ask all the representatives from our association here today to please stand and be recognized.

[Audience stood.]

Mr. STEVENSON. With regard to the fiscal year 1988 budget for civil works projects for the Corps of Engineers.

Senator DECONCINI. If you go away, we will have no audience.

Mr. STEVENSON. We are here as long as you are.

We note that the nationwide budget request for a total of $3.271 billion represents an increase of 6 percent over the comparable figure for fiscal year 1987. Because these projects create the infrastructure on which our economic growth and quality of life depend, we support this budget even in times of dire budget problems.

The net cost of this budget in terms of federal revenues will be reduced by $39.3 million in offsetting receipts, $38 million from the inland waterways trust fund, and $148 million from the harbor maintenance fund.

Moreover, much of this proposed expenditure will be paid back with interest while also contributing to the economy in payment for services and materials.

As you will note in the summary of the requests which appear at the beginning of our written testimony to which you allude, this delegation supports the fiscal year 1988 budget request for $62,794,000 for 13 projects as listed for the Corps of Engineers and $600,000 for 1 project for the Bureau of Reclamation. The Corps request for Trinity basin projects is up $2.2 million as compared to fiscal year 1987 budget request.

The increase is largely because of increasing costs of maintaining previously constructed reservoirs. We recommend the full funding of the Bureau of Reclamation's Bedias Creek investigation. If this project proves feasible, it will greatly benefit the middle and lower Trinity basin and metropolitan Houston, also.

We also have an additional request concerning the Wallisville project. The project remains under injunction by a federal judge who has recently determined that the Congress acted improperly in its actions on the fiscal year 1986 appropriation act.

This decision has been appealed and if a favorable ruling is issued before this appropriation bill is marked up, a supplemental funding request will be submitted to the committee for this project.

We are very grateful for your time, and we know it is pressed right at the moment. I would like to submit for the record a complete list of our delegation appearing here today and copies of the testimony to be given by our group.

With these remarks, I would like to call on a few people that you referred to who are members of our delegation who will speak very briefly on projects of specific concern to their particular areas.

The first speaker will be Mr. Mike Cummings, who is president of the Trinity River Authority of Texas.

Mike?

Mr. CUMMINGS. Mr. Chairman and members of the subcommittee, my name is Mike Cummings. I am from Fort Worth and a member of the board of directors of the Trinity River Authority of Texas representing Tarrant County and currently serve as president of the board of directors.

TRA supports the fiscal year 1988 funding capabilities for the U.S. Corps of Engineers and the Department of the Interior, Bureau of Reclamation projects for which we serve as local sponsor.

JOE POOL LAKE, TEX.

There are four specific areas that I would like to briefly address. The first is Joe Pool Lake Reservoir. Deliberate impoundment of this lake and reservoir was begun January 7, 1986. Approximately one-third of the water conservation pool has now been realized this year. As the water level rises, the public demand for recreation access to Joe Pool Lake increases. Facilities to allow for access will only become available through the appropriations made for 1988 and a few years beyond.

During the past year, TRA completed the construction on a $4.8 million locally funded intake structure which will allow for the withdrawal, treatment, and distribution of water supplied by Joe Pool lake.

The public will be able to benefit from Joe Pool lake in terms of water, recreation, and flood control with this committee's support for continuing funding.

BEDIAS RESERVOIR, TEX.

The next level is Bedias Reservoir funding control. The feasibility study and the evaluation requirements of the lower Trinity River basin and upper gulf coast of Texas will become available for public review. An appropriation of $600,000 will enable the Department of the Interior, Bureau of Reclamation to continue their investigation of Bedias Reservoir. We urge your continued support for this important federal study effort.

The third area is the Trinity River project and navigation to Liberty. The Fort Worth District of the Corps of Engineers has an appropriation of $300,000 to perform their evaluation of this project. The reevaluation became necessary with the passage of Public Law 99–662 and will provide a blueprint for making navigation more reliable as well as enhancing the entire southeast Texas region's economic prospect.

WALLISVILLE LAKE, TEX.

The last area, as Mr. Stevenson mentioned, relates to Wallisville. Last year, we reported to you that the federal district judge in Houston continued the Wallisville injunction because NEPA procedures were violated by Congress when the revised project was authorized in 1983.

This past February, the Corps of Engineers and local sponsors appealed this decision to the 5th Circuit Court of Appeals in New Orleans, and we now await their ruling, which we now anticipate in the next 30 days.

Should the New Orleans court appeal the Wallisville injunction, we ask for the Corps' capability to get this much needed project back under construction. The Corps of Engineers has requested, and TRA endorses, appropriations for operation and maintenance funds in the following amounts for the project we can currently support as local sponsors.

The first is Bardwell Lake, $705,000; Joe Pool Lake, $293,000; Navarro Mills Lake, $1,115,000; and the Wallisville project, $170,000.

Again, we sincerely appreciate the opportunity to testify before you today, and we surely appreciate the federal dollars which remain available for the people in the Trinity River basin. Thank you, sir.

Mr. STEVENSON. Thank you, Mike. The next statement will be presented by Mark Chu, councilman of the city of Denton.

RAY ROBERTS LAKE, TEX.

Mr. CHU. Mr. Chairman and members of the subcommittee, my name is Mark Chu, and I am a councilman from the city of Denton, Tex. Let me express my appreciation as well as that of Mayor Ray Stevens of Denton and Mayor Ray Stevens of Dallas and the city councilmen of Denton and Dallas for your committee's continued support for the Ray Roberts Lake project.

My testimony today is presented in behalf of the cities of Denton and Dallas, who are cosponsors of this project and have contracted with the Corps of Engineers for the design and construction of this project in order to obtain a water supply of 76 million gallons per day. As you are aware, the Dallas and Fort Worth area has experienced rapid growth in the last few years. This project is a necessary means to serve this growth and to provide a source of water supply, recreation, and flood protection for its citizens.

Since we last appeared before this committee in April 1986, construction of the dam and outlet works has progressed satisfactorily. The Corps has advised us that deliberate impoundment is scheduled for July 1987.

The cities of Denton and Dallas request that President Reagan's 1988 budget allocation for the Ray Roberts Lake project be accepted and supported by this committee. Funding requested includes $25 million for continued project construction. With your approval of this funding, the project can remain on schedule and construction of the reservoir, road and railroad relocations, design of recreational facilities, and land acquisition can continue.

Any cutbacks could mean a delay in the timely completion of this project which would hamper us greatly in meeting the water needs of our region. Also, as you know, when this project is completed, the local sponsors will begin paying back, with interest, the money advanced by the federal government. Any delay in this project will delay that.

Senator DECONCINI. Councilman, we have to move along. I wonder if you could summarize and finish it up. The vote has started, and I would like to get one more witness in here.

Mr. Chu. We would just like to count on you for your support.

Senator DeConcini. I am sorry to cut you short, but I can assure you that your full statement will appear in the record.

Mr. Stevenson. Let me introduce you to Mr. Greg Patton.

Joe Pool Lake, Tex.

Mr. Patton. I am going to summarize my talk here. My name is Greg Patton and I continue to serve as president of Joe Pool Lake Planning Council.

The lake is filling at this time and literally thousands of people are chomping at the bit to get to this lake. The majority of the $9 million containment appropriations for fiscal 1988 will be dedicated to park construction. This appropriation will be extremely important in terms of allowing timely public access to this most desirable resource. Mr. Chairman, we do strongly support this appropriation and request that the committee support it.

Senator DeConcini. Thank you.

Mr. Stevenson. Mr. Chairman, let me introduce Mr. Barkis.

Senator DeConcini. Can I ask Mr. Barkis to submit his statement to the record?

Mr. Stevenson. Mr. Carl Riehn is present, and others. We thank you very, very much for your time and your tremendous restraints today.

[The statements follow:]

STATEMENT OF THE TRINITY RIVER AUTHORITY OF TEXAS

SUMMARY OF REQUESTS - FY 1988

On behalf of the Trinity River of Texas delegation, the Trinity Improvement Association recommends the support of the Congress for the following projects of the Corps of Engineers and the Bureau of Reclamation in considering the Energy and Water Development Appropriations Bill for Fiscal Year 1988.

FUNDING REQUESTS:

PROJECT	BUDGET REQUEST
CORPS OF ENGINEERS	
CONSTRUCTION	
COOPER LAKE	$ 14,000,000
JOE POOL LAKE	$ 9,000,000
RAY ROBERTS LAKE	$ 25,000,000
OPERATIONS & MAINTENANCE	
BARDWELL LAKE	$ 705,000
BENBROOK LAKE	$ 1,975,000
DENISON DAM - LAKE TEXOMA	$ 4,641,000
GRAPEVINE LAKE	1,785,000
JOE POOL LAKE	$ 293,000
LAVON LAKE	$ 1,729,000
LEWISVILLE DAM	$ 2,121,000
NAVARRO MILLS LAKE	$ 1,115,000
RAY ROBERTS LAKE	$ 260,000
WALLISVILLE LAKE	$ 170,000
TOTALS	$ 62,794,000
U. S. BUREAU OF RECLAMATION	
GENERAL INVESTIGATIONS	
BEDIAS CREEK	$ 600,000

ADDITIONAL FUNDING REQUESTS:

WALLISVILLE PROJECT

If a favorable court decision is issued before mark-up of this appropriations bill, a funding request for the Wallisville Project will be submitted to the Committee.

TRINITY RIVER, TEXAS, NAVIGATION

It is requested the Committee support an appropriation of $300,000 for a reanalysis of navigation to the Port of Liberty.

Mr. Chairman & Members of the Subcommittee:

I am Mike Cummings of Fort Worth, Texas. I am a member of the Board of Directors of the Trinity River Authority of Texas (TRA) representing Tarrant County and currently serve as President of the Board of Directors.

TRA supports the FY 1988 funding capabilities for the U. S. Corps of Engineers and United States Department of the Interior Bureau of Reclamation projects for which we serve as local sponsor.

JOE POOL LAKE RESERVOIR

Deliberate impoundment of water in this reservoir was begun on January 7, 1986, and approximately 33% of the water conservation pool has been realized. As the water level rises, the public demand for recreation access to Joe Pool Lake increases. Facilities to allow for access will only become available through the appropriations made for 1988 and a few years beyond.

During the past year, TRA completed construction on a $4.8 million locally funded intake structure which will allow for the withdrawal, treatment and distribution of water supplied by Joe Pool Lake. The public will be able to benefit from Joe Pool Lake in terms of water supply, recreation and flood control with this Committee's support for continuing funding.

BEDIAS RESERVOIR

Later this year, the first feasibility study that evaluates the requirements of the lower Trinity River basin and upper Gulf Coast of Texas will become available for public review. An appropriation of $600,000 will enable the U. S. Department of Interior's Bureau of Reclamation to continue their investigation of Bedias Reservoir. We urge your continuing support for this important federal study effort.

TRINITY RIVER PROJECT - NAVIGATION TO LIBERTY

The Fort Worth District of the Corps of Engineers has a capability of $300,000 to perform a reevaluation of this project. The reevaluation became necessary with the passage of P.L. 99-662 and will provide a blueprint for making navigation more reliable as well as enhancing the entire southeast Texas region's economic prospects.

WALLISVILLE

Last year we reported to you that a federal district judge in Houston continued the Wallisville injunction because NEPA procedures were violated by Congress when the revised project was authorized in 1983. This past February the Corps of Engineers and local sponsors appealed this decision to the 5th Circuit Court of Appeals in New Orleans, and now we await their ruling which we anticipate within the next thirty days.

Should the 5th Circuit Court of Appeals lift the Wallisville injunction, we ask your support for funding of the Corps' capabilities to get this much needed project back under construction.

OPERATIONS AND MAINTENANCE

The Corps of Engineers has requested, and TRA endorses, appropriations for operation and maintenance funds in the following amounts for the projects we currently support as local sponsor:

Project	1988 Amount
Bardwell Lake	$ 705,000
Joe Pool Lake	293,000
Navarro Mills Lake	1,115,000
Wallisville Project	$ 170,000

CONCLUSION

Again, we express our appreciation for the opportunity to testify before you today. We sincerely appreciate the federal dollars which remain available for the people of the Trinity River basin.

STATEMENT OF THE CITIES OF DENTON AND DALLAS, TEX.

My name is Jim Alexander and I am councilman for the city of Denton. Let me express my appreciation, as well as that of Mayor Ray Stephens and the city councils of Denton and Dallas for your committee's continued support for the Ray Roberts Lake project.

My testimony today is presented in behalf of the cities of Denton and Dallas, who are cosponsors of this project, and have contracted with the Corps of Engineers for the design and construction of this project in order to obtain a water supply of 76 million gallons per day. As you are aware, the Denton-Dallas-Fort Worth area has experienced rapid growth in the last few years. This project is a necessary means to service this growth and to provide a source of water supply, recreation, and flood protection for its citizens.

Since we last appeared before this committee in April 1986, construction of the dam and outlet works has progressed satisfactorily; and the Corps has advised us that deliberate impoundment is scheduled for July 1987.

The cities of Denton and Dallas request that President Reagan's 1988 budget allocation for the Ray Roberts Lake project be accepted and supported by the committee. Funding requested includes $25 million for continued project construction. With your approval of this funding, the project can remain on schedule and construction of the reservoir, road and railroad relocations, design of recreational facilities, and land acquisition can continue. Any cutbacks could mean a delay in the timely completion of this project which could hamper us greatly in meeting the water needs of our region. Also, as you know, when the project is completed, the local sponsors will begin repaying, with interest, the money advanced by the federal government. Any delay in this project will, of course, delay that repayment.

I urge your careful consideration of the administration's budget request for full funding for the Ray Roberts Lake project. I look forward to your continued cooperation in this important matter.

Thank you very much.

STATEMENT OF THE JOE POOL LAKE PLANNING COUNCIL, TEX.

My name is Greg Patton and I continue to serve as president of the Joe Pool Lake Planning Council. We are a citizens booster group which has supported construction of this most worthwhile federal water project since before it was authorized by Congress in 1965.

I am here to report that Joe Pool Lake is filling with water and looks like a lake. There are literally thousands of people chomping at the bit to gain access, but the first park that will allow public access won't be available until midyear 1988.

For right now, and the near future, it will be just as well to have totally restricted access since the relatively low lake level poses a substantial safety hazard for boats. The task of restraining the public, however, becomes more of a chore for area law enforcement agencies every week.

The majority of the $9 million contained in the proposed appropriation for fiscal year 1988 will be dedicated to park construction. This appropriation will be extremely important in terms of allowing timely public access to this most desirable resource. We strongly support this appropriation and request this committee's support.

Thank you for your attention.

STATEMENT OF THE PORT OF LIBERTY, TEX.

My name is Art Barkis and I am president of the Port of Liberty.

Navigation in the natural channel of the lower Trinity River has always been problemmatic and dredging activity by the U.S. Army Corps of Engineers is needed on an annual basis. In future years, when the Corps again has capability to dredge the lower Trinity River, we will request that funds be appropriated toward that purpose.

The permanent solution for allowing dependable year-round shallow draft access to the Port of Liberty at river mile 45 is through development of a navigation channel. Under the caption of the Trinity River project, the Corps has completed a substantial amount of study work on such a possibility.

We request that this committee support an appropriation of $300,000 for a reanalysis of navigation to the Port of Liberty under Public Law 99–662. New cost-sharing provisions of that law could materially impact the affordability of this project on a local level.

We would like to thank this committee for their past support for dredging on the lower Trinity River and your future support for our reanalysis request.

The completion of the Wallisville project remains a priority and a must for the lower Trinity. Should the courts lift the injunction before you have acted, we urge this committee to fund the phase I construction, which is estimated to be $3.1 million.

The port, the Chambers-Liberty Counties Navigation District, and the city of Liberty thank you for the continued support of these two vitally important lower Trinity projects.

STATEMENT OF CARL W. RIEHN, EXECUTIVE DIRECTOR, NORTH TEXAS MUNICIPAL WATER DISTRICT, TEX.

Mr. Chairman and committee members, my name is Carl W. Riehn. I am the general manager and executive director of the North Texas Municipal Water District. Today, I represent the local sponsors on the Cooper Lake, Tex., project, which includes the city of Irving, Sulphur River Municipal Water District, and the North Texas Municipal Water District. These entities serve approximately 850,000 people in the state of Texas with potable drinking water.

As you are aware, the Cooper Lake, Tex., project was originally authorized in 1955; and, based on local contracts for 100-percent repayment for water supply cost, the project was placed under construction in 1968. In 1971, after the passage of the National Environmental Policy Act in 1969, a federal injunction stopped the project for lack of an environmental impact statement. The project stayed captive to the federal courts from March 1971 to July 1984. The people in the area never objected to the project and always supported the need for flood control, water supply, and water recreation on the South Sulphur River. Only an environmental group opposed to the development of all water resource projects in Texas went to the courts to stop the construction of the project. The project is still vitally needed for all of the federal and local purposes included. The only difference is that the cost will be substantially higher. But, each year the area grows and water supply and flood-protected land become more valuable. Therefore, it is urged that this committee and the Congress work with the U.S. Army Corps of Engineers to expedite this project that has been delayed for over 15 years.

The President's budget allocates $14 million to continue the Cooper Lake project. We request this appropriation and thank you for your previous support.

STATEMENT OF THE HOUSTON (TEX.) CHAMBER OF COMMERCE

My name is Carol Dinkins. I am with the Houston law firm of Vinson & Elkins and am testifying today as the spokesperson for the Houston Chamber of Commerce.

Houston has a compelling need for the additional surface water that will be made available by the completion of the Wallisville Reservoir and saltwater barrier project. Large-scale pumping of ground water exacerbates ground subsistence and flooding problems in the Houston area. A more total transition to surface water use—as soon as it becomes available—is the most positive action to prevent even further subsidence damage. Wallisville and its water supply represents a key piece in the solution to this environmental puzzle.

The Houston Chamber solicits this committee's support as the Corps of Engineers and project sponsors continue to pursue relief from the injunction that has restrained this most important public project since 1973. For the fiscal year 1988 budget, an appropriation of $170,000 has been proposed to continue maintaining Wallisville's mothballed status. Should the 5th Circuit Court of Appeals lift the injunction with a decision expected within the next month, we would ask your further support for funding the Corps' full capacity to get this project restarted.

Because of this committee's visionary approach to water resource development, this project has a second chance. The chamber and the citizens of Houston thank you for your continuing support for water resource development in our area.

TRINITY IMPROVEMENT ASSOCIATION
1987 CONGRESSIONAL HEARINGS
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The Honorable H. N. (Red) Denham
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Polk County Courthouse
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The Honorable Paul Harrell
Commissioner
County of Polk
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The Honorable Bobby Smith
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County of Polk
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The Honorable J. J. (Buddy) Purvis
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STATEMENT OF THE TEXAS WATER DEVELOPMENT BOARD

TRINITY RIVER BASIN OF TEXAS

The Texas Water Development Board respectfully submits project testimony regarding Corps of Engineers projects in the Trinity River Basin of the State of Texas.

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide for National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects addressed in this statement are considered as integral elements in the State's present and future water resource development program.

LITTLE FOSSIL CREEK, HALTON CITY, TEXAS

In 1982, the City of Halton City, Texas requested a flood damage protection study on Little Fossil Creek which is located in an urbanized area northeast of Fort Worth, Texas. The City has indicated an understanding of the current cost-sharing policy as it pertains to feasibility studies by the Corps of Engineers and is willing to act as local sponsor. A reconnaissance-level study of ways to protect this flood-prone area was initiated in FY 87 and is scheduled for completion in February 1988. The Board supports the President's budget recommendation of $75,000 for FY 88 to initiate the feasibility phase for the Little Fossil Creek flood damage protection study.

RAY ROBERTS AND JOE POOL LAKES

Ray Roberts Lake, jointly sponsored by the Cities of Dallas and Denton, and Joe Pool Lake, sponsored by the Trinity River Authority of Texas, are included in the President's budget for FY 88 in the amounts of $25 million and $9 million, respectively. Both reservoirs are high priority projects because of rapid regional growth which is resulting in a need for additional water supply, flood control and recreation facilities which the lakes will provide. The Board requests the Committee's support for the budgeted amounts recommended by the President during FY 88 in order to continue scheduled construction of these projects.

OPERATION AND MAINTENANCE

The Board supports funding to the Corps of Engineers for operation and maintenance during FY 88 for the following projects located in the Trinity River Basin; Bardwell Lake ($705,000); Benbrook Lake ($1,975,000); Grapevine Lake ($1,785,000); Joe Pool Lake ($293,000); Lavon Lake ($1,729,000); Lewisville Dam ($2,121,000); Navarro Mills Lake ($1,115,000); Ray Roberts Lake ($260,000); and Wallisville Reservoir and Saltwater Barrier ($170,000). These amounts are included in the President's budget for FY 1988.

CONCLUDING COMMENTS

The Texas Water Development Board requests Committee support of these regional water resource development needs. The Board most respectfully urges the appropriation of funds as requested in order to accomplish the coordinated, orderly development of urgently-needed water resources projects in the Trinity River Basin in the State of Texas.

RED AND SULPHUR RIVER BASINS AND CYPRESS CREEK BASIN

The Texas Water Development Board respectfully submits project testimony regarding Corps of Engineers projects located in the Red and Sulphur River Basins and Cypress Creek Basin of the State of Texas.

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects included in this statement are considered as integral elements in the State's present and future water resource development program.

RED RIVER BASIN CHLORIDE CONTROL PROJECT

The Red River Basin Chloride Control project, directed toward the improvement and preservation of water quality in the States of Texas, Oklahoma, Louisiana, and Arkansas, is imperative in order to realize full utilization of these surface-water supplies. Presently, more than 1,000 miles of streams in the river basin are severely contaminated by natural brines. Consequently, waters of the streams are not suitable for municipal and most industrial and agricultural purposes. Large volumes of salt enter the streams from 15 natural sources, 10 of which are located in Texas. There exists an immediate need for good quality water within and to the west of the areas of natural salt pollution, as well as a long-term need downstream in the eastern part of the Red River Basin.

Passage of the 1966 and 1970 Flood Control Acts (P.L. 89-789 and P.L. 91-611) authorized construction of measures to control the natural salt pollution from Areas VI, VII, VIII, IX, X, XIII, XIV, and XV in the basin, subject to the provision that construction on the project could not be started until approved by the Secretary of the Army. Initiation of construction at Area VIII on the Wichita River, prior to the required approval by the Secretary of the Army, was authorized by the 1974 Water Resources Act. Construction at Area VIII, which includes the Truscott Brine Lake, was begun in February 1977 and is nearing completion. With the exception of Area VIII, construction at the remaining seven areas and two brine lakes of the Red River Chloride Control project is awaiting approval by the Secretary. It is our understanding the Secretary is delaying approval pending a commitment of up-front financing from the states involved in the overall project.

Congress authorized construction of the entire Red River Chloride Control project to control natural brine sources as a 100 percent federal project (P.L. 89-789 and P.L. 91-611). Subsequently, the components of the overall project were re-evaluated by the Corps of Engineers, at the request of Congress, and the results of the re-evaluation have been reported in the Corps' "Supplemental Data to Arkansas-Red Basin Chloride Control, Red River Basin Design Memorandum No. 25, General Design, Phase I-Plan Formulation", Vols. I and II, Department of the Army, Tulsa District Corps of Engineers, Oklahoma, November 1980. The re-evaluation reaffirmed both the economic and technical feasibility of this project. According to our information, the Secretary of the Army has not reached the necessary decisions regarding this project and has not forwarded the findings and project reaffirmation onward for ultimate Congressional action.

We strongly urge that Congress request the Secretary of the Army to forward the report and his recommendation on this project to the Office of Management and Budget, and to Congress, in accordance with the provisions of the project's authorizing legislation, as amended (PL 99-662). Accordingly, we request the Committee appropriate funding to initiate construction on the remaining seven areas at full Federal expense.

LAKE WICHITA, HOLLIDAY CREEK

Lake Wichita was constructed on Holliday Creek by the City of Wichita Falls, Texas, in 1901. The dam and spillway, which provides partial flood protection for highly developed urban areas of the City of Wichita Falls, has deteriorated badly and the spillway capacity is inadequate to handle floods which occur in the Holliday Creek watershed. Further, the dam has been assigned a high hazard classification by the Corps under the National Dam Safety Program and has been declared unsafe by both the Corps and the State of Texas. In response to Congressional resolution and studies authorized by the Chief of Engineers, the Corps has completed studies and has recommended a plan to meet the flood control needs of the area which includes replacement of the existing Lake Wichita Dam and enlargement of the channel downstream of the dam. Additionally, feasibility studies of McGrath Creek flood control improvements were requested by the City of Wichita Falls. These studies were completed as part of the continuation of planning and engineering for Lake Wichita-Holliday Creek and a feasibility report has been forwarded to the Office of the Chief of Engineers for review. The City of Wichita Falls strongly supports the project and will assume all non-federal responsibilities.

The President's budget recommends $1,500,000 be provided to continue construction of the Lake Wichita-Holliday Creek project during FY 1988. The Texas Water Development Board strongly supports authorization of the project and appropriation of funds to the full extent of the President's budget for FY 1988 and the appropriation of funds for the continuation of the McGrath Creek studies.

COOPER LAKE AND CHANNELS, TEXAS

The Cooper Lake and Channels Project, located in the Sulphur River Basin upstream of Lake Wright Patman in the State of Texas, was authorized by Public Law 218 of the 84th Congress. In addition to providing 273,000 acre-feet of water conservation storage space, the reservoir will allow sufficient storage for basin-wide flood protection to convert 120,000 acre-feet of flood control space in Lake Wright Patman into water supply storage for the Texarkana water demand area.

The Water Development Board appreciates the consideration the Committee has allowed the project in the past. Cooper Lake and Channels has been subjected to lengthy delays, due in large part in recent years to litigation under the National Environmental Policy Act and subsequent alleged inadequacies in the Environmental Impact Statement. That litigation has now been resolved. Completion of Cooper Lake is essential to meet existing and future water needs of the Sulphur River Municipal Water District, City of Irving, Texas, and the North Texas Municipal Water District. The North Texas Municipal Water District membership includes 11 cities in the rapidly-expanding urban area of more than 530,000 residents in a 1,600 square-mile area to the north and east of Dallas. The District serves 44 other entities, including 17 customer cities, rural water supply corporations, and municipal utility districts in the region. The District faces serious, short-term water supply problems unless construction of Cooper Lake is completed, since its total water supply is currently provided by one reservoir - Lake Lavon. This is considered one of the most critical water-supply problems in Texas.

This project is one of the most urgently-needed water resource projects in Texas. The Board strongly urges the Committee to appropriate the $14,000,000 requested in the President's budget for FY 88 to continue construction of Cooper Lake.

RED RIVER WATERWAY PROJECT

The Rivers and Harbors Act of 1968 authorized the Red River Waterway Project featuring a navigation channel from the Mississippi River to Shreveport, Louisiana, and Daingerfield, Texas, and stabilization of the banks of the Red River from the Mississippi River to Shreveport, Louisiana; Shreveport, Louisiana to Daingerfield, Texas; Shreveport, Louisiana to Index, Arkansas, and vicinity of Index, Arkansas to Denison Dam, Texas. Construction under this authorization has been initiated in the Mississippi River to Shreveport, Louisiana reach.

Completion of the Red River Waterway will significantly boost the economy throughout the river basin and reduce widespread unemployment of the area. Therefore, the Board supports the resumption of preconstruction planning of the waterway segment from Shreveport, Louisiana to Daingerfield, Texas and urges the Committee appropriate $100,000 for this purpose in FY 1988.

OPERATION AND MAINTENANCE OF EXISTING PROJECTS

The Board supports appropriations to the Corps of Engineers for operation and maintenance of the following projects during FY 1988. Arkansas-Red River Basin Chloride Control, Area VIII ($586,000); Denison Dam, Lake Texoma ($4,641,000); Ferrells Bridge Dam-Lake O'the Pines ($1,906,000); Lake Kemp ($152,000); Pat Mayse Lake ($750,000); and Wright Patman Lake ($1,669,000).

CONCLUDING COMMENTS

The Texas Water Development Board requests Committee support of the Red and Sulphur River Basins and Cypress Creek Basin water resource development efforts. The Board most respectfully urges the appropriation of funds as requested in order to accomplish the coordinated, orderly development of vitally-needed water resource projects in the Red and Sulphur River Basins and the Cypress Creek Basin in the State of Texas.

BRAZOS RIVER BASIN OF TEXAS

The Texas Water Development Board respectfully submits project testimony regarding Corps of Engineers projects located in the Brazos River Basin of the State of Texas.

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide for National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects addressed in this statement are considered as integral elements in the State's present and future water resource development program.

BRAZOS RIVER AND TRIBUTARIES PROJECT

A basinwide reconnaissance survey was initiated in FY 87 to address numerous water-related problems in the Brazos River Basin. The study includes the analysis of measures for control of floods, development of water supply, hydroelectric power, recreation, and fish and wildlife. Currently, the study is underway in the Leon, Lampasas, and Little River watersheds. The study is scheduled to move to other areas of the Basin in FY 88. A total of $642,000 was requested by the President to continue this study in FY 88. The Board supports the President's appropriation request.

OPERATION AND MAINTENANCE OF EXISTING PROJECTS

The Board supports appropriations to the Corps of Engineers for operation and maintenance during FY 1988 for the following projects located in the Brazos River Basin: Aquilla Lake ($383,000); Belton Lake ($1,474,000); North San Gabriel Dam and Lake Georgetown ($1,062,000); Granger Lake ($925,00); Proctor Lake ($1,210,000); Somerville Lake ($2,272,000); Stillhouse Hollow Lake ($1,358,000); Waco Lake ($1,764,000); and Whitney Lake ($2,410,000).

CONCLUDING COMMENTS

The Texas Water Development Board sincerely appreciates this opportunity to provide testimony to the Committee and most respectfully urges the appropriation of funds as requested in order to accomplish properly coordinated, timely, and orderly development of these urgently needed water resource projects in the Brazos River Basin of the State of Texas.

BUREAU OF RECLAMATION INVESTIGATIONS AND PROJECTS IN TEXAS

The Texas Water Development Board respectfully submits project testimony regarding Bureau of Reclamation projects in the State of Texas.

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide for National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects addressed in this statement are considered as integral elements in the State's present and future water resource development program.

BEDIAS LAKE PROJECT

The Board's planning work indicates that the Houston-Galveston metropolitan area will continue to grow rapidly and will therefore need additional firm surface-water supplies in the immediate future in order to avoid further reliance on ground-water resources. The area continues to experience serious land subsidence problems due to heavy ground-water pumpage. Bedias Lake has been identified as a potential water supply project for the area and has been included in the State's plan for development since the middle 1960's. The Lake has been included as an element of a "continuing" plan to supply water for municipal and industrial purposes in the lower Trinity River Basin. The future water requirements of the metroplex in excess of needs which can be met by local supplies can be partially met from Bedias Lake.

The President has included in his FY 88 budget proposal $600,000 to prepare a Planning Report/Draft Environmental Impact Statement which will complete the Plan Formulation Phase of a study program by the Bureau of Reclamation to investigate the hydrologic and economic feasibility of Bedias Lake. The future water supply needs of the Lower Trinity River Basin are increasing and we strongly urge your consideration of the amount included in the President's budget for FY 88 for the Bedias Lake study.

SAN JACINTO RIVER PROJECT

The San Jacinto River Basin and neighboring areas continue to grow rapidly. Much of the area has depended upon ground water to satisfy its municipal and industrial water needs in the past. The result has been a significant lowering of water levels within the area and severe land subsidence. Subsidence problems are extremely serious in that subsidence has aggravated local area drainage and flooding problems and also subjects the people and property of this region to tidal surges during hurricanes.

The Board's projections indicate that additional surface water supplies will be needed in the mid-1990's in order to meet the growing demands for municipal and industrial water. Thus, the Board urges the Committee appropriate $500,000 for the Bureau of Reclamation to initiate advanced planning for Lower Lake Creek Reservoir in FY 88.

NUECES RIVER PROJECT

A total of $2,018,000 is included in the President's FY 88 budget for construction of recreation facilities and fishery management activities for the Nueces River Project. The Board supports the President's recommendation for funding in FY 88.

PALMETTO BEND PROJECT

A total of $700,000 is included in the President's FY 87 budget to continue construction of the Palmetto Bend Project. The Board supports the President's recommendation for funding in FY 88.

SMALL PROJECT LOAN PROGRAM

The Board supports the President's recommended funding during FY 88 to the following small projects: Delta Lake Irrigation District ($175,000); Hidalgo County Irrigation District No. 1 ($2,009,000); and Hidalgo County Irrigation District No. 2 ($56,000).

CONCLUDING COMMENTS

The Texas Water Development Board sincerely appreciates this opportunity to provide testimony to the Committee and most respectfully urges the appropriation of funds as requested in order to accomplish properly coordinated, timely, and orderly development of these urgently needed water resource projects in the State of Texas.
TEXAS WATER DEVELOPMENT BOARD

ADDITIONAL PREPARED STATEMENT

Senator DECONCINI. I understand Mr. Plomarity and Mr. Miller, representing the Port of Corpus Christi, have agreed to simply insert their prepared statements into the record in order to save some time. We appreciate their cooperation and understanding, and their statement will be inserted at this point.

[The statement follows:]

STATEMENT OF HARRY G. PLOMARITY, EXECUTIVE DIRECTOR, PORT OF CORPUS CHRISTI AUTHORITY

Mr. Chairman and Members of the Subcommittee:

My name is Harry G. Plomarity. I am Executive Director of the PORT OF CORPUS CHRISTI AUTHORITY of Corpus Christi, Texas local sponsor of the federally authorized Corpus Christi Ship Channel, Texas Project which presently is over 64 percent complete.

REQUEST FOR FUNDS

I appear before you today requesting that the 100th Congress 1st Session, appropriate the following funds which the President included in his FY88 budget.

A. FUNDS NECESSARY TO CONTINUE DREDGING THE AUTHORIZED 45-FOOT PROJECT
Appropriate $6,200,000 to continue deepening and widening the CORPUS CHRISTI SHIP CHANNEL PROJECT, pursuant to the 45-foot authorization contained in Senate Document No. 99, Public Law 483, dated August 13, 1968.

B. FUNDS FOR OPERATION AND MAINTENANCE OF THE CORPUS CHRISTI SHIP CHANNEL PROJECT
Appropriate $4,540,000 to continue maintaining the Corpus Christi Ship Channel pursuant to the authorized dimensions contained in the President's budget.

DESCRIPTION OF AUTHORIZED BUT INCOMPLETED SHIP CHANNEL IMPROVEMENTS
The following authorized improvements are yet to be completed:

A. Bids were recently received to widen and deepen the Tule Lake Channel and Tule Lake Turning Basin and completing construction beginning at the Chemical Turning Basin and extending westward from Mile 26.10 to Mile 29.30. Great Lake Dredging and Dock Company was the apparent low bidder having bid $5,930,950 for dredging this reach of waterway. The Contractor's bid was below the Government's estimate.

B. Complete construction of the retaining works including: Levees, dikes, weirs, drainage structures, etc. in the Suntide-South Shore Disposal area, needed to contain the dredged materials and return the effluent to the Nueces River west of the Viola Turning Basin was awarded to Midwest Construction Company with a bid of $3,658,641. Construction work has recently begun on this contract which project is about two (2%) percent complete.

C. Widening and deepening the Viola Channel and Viola Turning Basin to the head of navigation terminating at Mile 31.60 is scheduled for completion in March, 1990.

DESCRIPTION OF CONSTRUCTION AND MAINTENANCE ACTIVITIES IN PROGRESS

A. DREDGING OF THE 45-FOOT INNER HARBOR PROJECT

A. Completed in April, 1986 was the deepening and widening of the most easterly reach of the Inner Harbor extending from Beacon 82 in Corpus Christi Bay to the westerly limit of the Chemical Turning Basin (Mile 21.90 to Mile 26.10). With completion of this contract about seventy-five (75%) of the Port's current waterborne commerce is accessible to the 45-foot Ship Channel Project.

The $4,730,570 contract of C. F. Bean Dredging Company included deepening the Corpus Christi Turning Basin, the Industrial Canal and widening and deepening the Avery Point and Chemical Turning Basins. Work began in March, 1985, but was not finished until April, 1986 due to unforeseen difficulties experienced by the Contractor.

Existing bulk liquid cargo docks have been upgraded to accommodate deeper draft vessels.

TO ACCOMPLISH THIS WORK SCHEDULED BY THE CORPS IN FY88 REQUIRES A CONGRESSIONAL APPROPRIATION OF $6,200,000 WHICH REPRESENTS THE CORPS CAPABILITY. THIS APPROPRIATION IS INCLUDED IN THE PRESIDENT'S BUDGET.

B. OPERATION AND MAINTENANCE OF THE CORPUS CHRISTI SHIP CHANNEL PROJECT

Request that funds in the amount of $4,540,000 be appropriated for maintaining the 45-foot Project dimensions between the La Quinta Channel Junction (Mile 11.76) and Beacon 82 (Mile 21.90) which is about 0.90 miles seaward of the entrance to the Inner Harbor.

TO ASSURE ADEQUATE MAINTENANCE OF AUTHORIZED PROJECT DEPTHS, THE PORT AUTHORITY SUPPORTS THE PRESIDENT'S BUDGET RECOMMENDATION THAT $4,540,000 BE APPROPRIATED FOR FY88 TO CONTINUE MAINTAINING THE WATERWAY TO PROJECT DIMENSIONS.

C. APPROVED DISPOSAL PLAN

A disposal plan acceptable to the Federal Agencies, (although not a 50-year disposal plan as originally proposed to accommodate the widening, deepening, and maintenance of the Inner Harbor) has been finalized. A record of decision was made by the Division Engineer and filed with EPA.

D. LEVEES CONSTRUCTION CONTRACT - SOUTH SHORE LEVEES

Bids for South Shore levee construction by the 4F Construction Corporation was completed in September, 1984 at a cost of $2,891,870.

E. LEVEE CONSTRUCTION CONTRACT - SOUTH SHORE DISPOSAL SITES AND MITIGATION LANDS

Midwest Construction Company was low bidder with a bid of $3,658,647 for developing the mitigation lands and constructing levees, drainage ditches, weirs, etc. in the Suntide - South Shore Disposal area. Work has just begun, with the Contractor having completed only about (2%) two percent of the work.

F. DREDGING CONTRACT - CHEMICAL BASIN TO AND INCLUDING TULE LAKE TURNING BASIN

Great Lakes Dredging and Dock Company is the apparent low bidder for widening and deepening the Corpus Christi Ship Channel from the Chemical Basin westward to and including the Tule Lake Turning Basin. Their bid of $5,930,950 was below the Government estimate. A contract is expected to be awarded soon for this reach of the work.

G. EROSION CONTROL CONTRACT - NUECES BAY DISPOSAL AREA

Because of serious erosion, which was occurring where the levees front on Nueces Bay, it was necessary that, the Corps during 1985 and 1986 award an $189,000 contract to Kitchen Construction Company of Port Lavaca to restore, reshape and rip rap the levees that were eroding away because of the action of the wind and waves.

H. MAINTENANCE DREDGING CONTRACT - CORPUS CHRISTI BAY REACH OF THE SHIP CHANNEL

Plans and specifications have been prepared and bids are scheduled to be received in April or May, 1987 for the maintenance dredging to restore the Corpus Christi Bay reach of the Corpus Christi Channel between the La Quinta Channel Junction, Mile 11.76, and Beacon 82, Mile 21.90 to project dimensions.

JUSTIFICATION FOR CONGRESS APPROPRIATING FUNDS RECOMMENDED BY THE PRESIDENT

According to the latest Corps statistics (1984) the Port of Corpus Christi ranks second in commerce among Texas Ports and among the eight largest Ports in the Nation in waterborne commerce handled. In 1986, Corpus Christi waterborne commerce totalled 57,014,955 tons (PCCA statistics) up from 52,067,672 tons in 1985.

The decline in waterborne commerce at the PORT OF CORPUS CHRISTI during recent years is attributable primarily to three factors: (a) worldwide economic conditions; (b) sharp reduction in crude oil and mineral imports, and (c) loss of a major share of the Port's grain export business due to the decline in prices in the world market.

Port Commerce in 1986 increased an average of nine (9%) percent over that of the previous year, however, a record gain of thirty-two (32%) percent occurred over 1982 tonnage. The 1986 commerce was accommodated in 1118 ships and 5433 barges, a slight decrease in traffic from the previous year, yet Port tonnage showed an increase of nine (9%) percent.

In 1986, tonnage experienced an increase of 4,939,562 tons over that shown of 1985. In general, the category of commerce was divided as follows: petroleum 84.02 percent; chemicals 7.67 percent; grain 1.94 percent; and dry bulk cargo 6.37 percent.

Within the limits of the Inner Harbor, petroleum and chemicals represented the most significant increase in tonnage while grain exports indicated the greatest decline. Petroleum tonnage increased 12 percent and chemicals 19 percent, while grain exports declined 45 percent. However, general cargo in the Inner Harbor declined only three (3) percent indicating a general stabilization of this type of cargo.

Within the various Ports divisions, Inner Harbor commerce increased 11 percent, while Ingleside commerce increased 112 percent, the largest percentage increase in any division of the Port.

Tonnage on the La Quinta Harbor division decreased 13 percent while Harbor Island commerce declined 73 percent. This greater decline resulted from the fact that crude oil cargoes only are discharged at Harbor Island. However, it is anticipated that tonnage originating at Harbor Island will increase significantly in 1987, as a recently rebuilt crude oil dock is returned to service.

Table No. III, shown below, compares 1985 and 1986 Port commerce and the percentage changes which occurred during the year.

TABLE NO. III
COMPARISON OF 1985 - 1986 PORT COMMERCE

TYPE OF CARGO	1985 PORT COMMERCE (TONS)	1986 PORT COMMERCE (TONS)	PERCENTAGE CHANGE Increase	Decrease
PETROLEUM	42,657,549	47,093,338	(+)12%	--
CHEMICALS	3,682,387	4,371,724	(+)19%	--
GRAIN	1,997,722	1,106,596		(-)45%
DRY CARGO	3,737,735	3,633,297		(-) 3%
TOTAL PORT COMMERCE	52,075,393	57,014,955	Avg. (+) 9%	

CONCLUSIONS:

1. Beginning in 1978, due to worldwide economic conditions and other factors, waterborne commerce through the Port of Corpus Christi declined as it did at most ports. However, in 1984, Port Commerce began a steady increase rising to 52,067,672 tons. In the following year it again showed a slight increase which increases have continued during each succeeding year.

2. Past Congressional appropriations for constructing and maintaining the PORT OF CORPUS CHRISTI since it was first authorized and opened to world commerce in 1926 certainly were fully justified.

3. However, some form of Congressional funding must continue to be available as additional channel improvements are required to accommodate larger vessels and increased traffic.

4. Federal expenditures on the 45-foot project through FY86 has totaled $22,511,000. With Non-Federal expenditures totaling $6,385,000 of which $1,930,000 represented cash contributions and $4,455,000 represented utility relocation costs.

5. These costs do not include the estimated cost of constructing additional authorized layberths near Port Ingleside, Texas. Under the Corps present policy (HB6), when these layberths are required local interests share of the cost will be approximately (20%) percent.

PROJECTED FUTURE GROWTH PLANS AT THE PORT OF CORPUS CHRISTI

The Port of Corpus Christi is projecting a bright future as it continues to diversify the types of cargo handled and broadens its cargo base.

Some of the major projects which are underway and rapidly expanding includes:

(1) The Corpus Christi Foreign-Trade Zone, the first zone authorized outside the Continental United States to accommodate liquid cargoes continues to expand at a rapid rate.

(2) NAVY HOMEPORT, situated near Port Ingleside, Texas, will become the future home of the U.S.S. Battleship Wisconsin, the U.S.S. Aircraft Carrier Lexington; a destroyer, a cruiser and a mine sweeper.

(3) Developing a container yard to accommodate the expenditures handling of increased container traffic.

(4) Develop Dock One Market at the entrance of the Inner Harbor by converting two under-utilized existing dry cargo docks into shops, restaurants and for similar related activities. This project would become part of the Bay Front Plaza and is projected to be part of a future marine transportation center.

STATUS OF AUTHORIZED IMPROVEMENTS TO THE CORPUS CHRISTI SHIP CHANNEL PROJECT

All improvements to the Corpus Christi Ship Channel Project (Formerly Port Aransas-Corpus Christi Waterway) authorized prior to the 90th Congress, 2nd Session are essentially complete. TABLE I below shows existing, completed and authorized dimensions of the respective reaches of the waterway between the Gulf of Mexico and the head of navigation at Mile 31.60.

TABLE NO. 1
STATUS OF CORPUS CHRISTI SHIP CHANNEL PROJECT
EXISTING AND AUTHORIZED WATERWAY DIMENSIONS
(AS OF MARCH 1, 1987)

SECTION OF WATERWAY	EXISTING DIMENSIONS (IN FEET)		AUTHORIZED DIMENSIONS (IN FEET)	
DESCRIPTION	DEPTH MLT	BOTTOM WIDTH	DEPTH MLT	BOTTOM WIDTH
Outer Bar Channel	X	X	47	700
Jetty Channel:				
Outer End Jetty Channel to Jetty Entrance	X	X	47 to 45	700 to 600
Between Jetties	X	X	45	600
Inner Basin at Harbor Island	X	X	45	730 to 1720
Inner Basin to Ferry Landing at Port Aransas	X	X	45	600
Port Aransas to La Quinta Channel Junction	X	X	45	500
Lay Berths - Port Ingleside	X	X	45	150
La Quinta Junction to Corpus Christi	X	X	45	400
La Quinta Channel	X	X	45	300
La Quinta Turning Basin	X	X	45	800X1200
Corpus Christi Turning Basin	X	X	45	800
Industrial Canal	X	X	45	400
Avery Point Turning Basin	X	X	45	975X1050
Tule Lake Channel (Avery Point to Chemical Turning Basin)	X	X	45	400 MIN.
Chemical Turning Basin	X	X	45	1200 DIA.
Tule Lake Channel (Chemical Basin to Tule Lake Basin)	(A) X	200	45	300
Tule Lake Turning Basin	(A) X	900	45	1000X1200
Viola Channel and Basin	(B) 40	200	45	300
Viola Turning Basin	(B) 40	700 to 900	45	1200 DIA.

X WATERWAY COMPLETED TO AUTHORIZED DIMENSIONS

(A) LEVEE CONSTRUCTION COMPLETED

(B) PLANS FOR LEVEES IN SUNTIDE AND SOUTH SHORE HAS BEEN BID AND THE WORK IS IN PROGRESS

TABLE NO. I:
WATERBORNE COMMERCE AND TRAFFIC
CORPUS CHRISTI SHIP CHANNEL PROJECT

	TOTAL WATERBORNE COMMERCE & TRAFFIC(ALL DIVISIONS)			CORPUS CHRISTI WATERBORNE COMMERCE & TRAFFIC EXCLUDING HARBOR ISLAND		
	(1)(2)COMMERCE (SHORT TONS)(3)		(1) TOTAL (2)(4) VESSEL TRAFFIC (ONE WAY ONLY)	(1) COMMERCE (SHORT TONS)(3)		CORPUS CHRISTI TRAFFIC(1)(2)(4) (ONE-WAY ONLY)
YEAR	U.S. CORPS OF ENGINEERS (3)	PORT OF CORPUS CHRISTI		U.S. CORPS OF ENGINEERS	PORT OF CORPUS CHRISTI (1)(2)	
1976	43,492,959	48,293,793	7033	38,558,753	43,432,049	4782
1977	56,041,113	60,699,825	(4) 5446	46,732,810	53.705,517	(4) 4761
1978	54,678,296	61,246,725	(4) 6500	46,554,601	54,611,337	(4) 5529
1979	55,597,104	60,846,745	(4) 6991	46,422,792	54,121,877	(4) 6168
1980	45,087,364	53,506,420	(4) 7408	39,107,016	48,802,788	(4) 6822
1981	42,016,730	50,310,474	(4) 6786	39,148,522	47,545,612	(4) 6395
1982	37,993,976	43,152,365	(4) 5832	36,186,072	41,497,550	(4) 5500
1983	(X) 39,131,318	47,200,479	(4) 6374	-	45,363,444	(4) 6100
1984	44,081,109	52,067,672	(4) 6551	-	50,035,776	(4) 6984
1985	-	52,075,393	(4) 7118	-	51,036,612	(4) 6984
1986	-	57,014,935	(4) 6672	-	51,204.230	(4) 6539

(1) Statistical information provided by the Port of Corpus Christi Authority. Port Authority records are maintained slightly different from those of the Corps of Engineers.

(2) Corpus Christi Port tonnage and traffic includes the Corpus Christi Inner Harbor, Port Ingleside, La Quinta Channel, Harbor Island, and Rincon Industrial Park. Harbor Island Commerce and traffic is shown separately, but it also includes the total waterborne commerce and total traffic accommodated along entire length of the waterway.

(3) Certain military cargoes and bunkers moving across the docks are excluded from these totals, but bunkers loaded on board ships from barges is counted as barge cargo. The Port of Corpus Christi Statistics are based upon actual records taken from cargo manifests received in the Port Authority's office.

(4) Beginning in 1977, each barge was counted separately but tugs handling these tows are not included in the above totals.

(X) The waterborne commerce shown in 1983 appears to be in error.

CENTRAL ARIZONA PROJECT—OPPOSITION

STATEMENT OF ROBERT WITZEMAN, MARICOPA AUDUBON SOCIETY

Senator DECONCINI. We regret the situation that has developed, but this is the way life is around the Senate. We don't know these things are going to happen on a Tuesday afternoon. Thank you. I am going to try to hear one more witness before I leave to go to the vote. That will be Dr. Robert Witzeman, Maricopa Audubon Society.

Dr. Witzeman?

Dr. Witzeman, I wish we had about a half hour for your statement and about a half hour for other statements. Could I have the room quiet? If you can converse outside, the committee would greatly appreciate it.

Time constraints being what they are, we will put any full statements you have into the record and you may summarize as you see fit.

Dr. WITZEMAN. Thank you, Senator. I will. The Audubon Society has no objection to raising Roosevelt Dam for safety reasons. The studies show that in the last 2,000 years, damages that have occurred from previous floods did show indeed that the Roosevelt Dam is unsafe and it should be repaired. It should be repaired at once.

In fact, the Sonoran Desert Dam should be repaired. It is unsafe and, as you know, Governor Babbit told us several times back on St. Valentine's Day in 1980 to prepare to evacuate downtown Phoenix. Waltervville Dam, we have no objections to. Economically, we find it is appropriate to be building dams that provide water for growing surplus crops as this dam would, since nothing else from the dam will go to municipal or development in the state.

However, I think the only people that would be adversely affected by that dam, except for the U.S. taxpayers, are Senators Johnston and Grassley, whose cotton growers have consistently been put out of business by our cotton growing in the western Sunbelt.

CLIFF DAM, ARIZ.

To summarize it very quickly, Senator, for the Cliff Dam, there are alternatives that are completely rational. For example, 15,000 acre-feet of water that it generates could be replaced by simply buying three 1,000-acre cotton farms.

In fact, this is just what the cities are doing. The city of Phoenix recently bought northwest of the city of Phoenix some 40,000 acres of water per year they will get from land that they took in from another area.

Then as you know, the city of Mesa bought another 40,000 acres of water that they will eventually get from the Eloi area.

Thus we find that simply buying three cotton farms as the city of Mesa or the city of Tempee have already done, would give us the water that that dam fields.

Senator DECONCINI. Dr. Witzeman, on that dam, let me ask you a question. You have been an opponent of any dam on the Verde River. You won the battle on the Orme Dam. After 5 years of study and almost $20 million, the Bureau of Reclamation and community representatives from a cross section of our whole state approved, and the Secretary approved, plan 6, a suitable alternative to Orme.

Do you still oppose the Cliff Dam? I guess I am under the impression that you will not be satisfied with anything but the elimination of Cliff Dam altogether.

If that is true, and correct me if I am misreading your statement, and if that was to happen, what would your views be on the new Waddell Dam and the modification of Roosevelt Dam?

Dr. WITZEMAN. Of course, I did begin my speech precisely by discussing my precise views on Roosevelt and Waddell.

Senator DECONCINI. You have no problem with that.

Dr. WITZEMAN. That is correct.

Senator DECONCINI. That about Waddell Dam?

Dr. WITZEMAN. The only objections we would have to be as to the U.S. taxpayer, because the electric benefits are, of course, less than the value of the cost of building the dam. The first 6,000 acre-feet of water that it provides does not provide water for cities or industries; it only provide it for agribusiness. Primarily since that is growing cotton in Arizona, it is against the national interest to build dams to grow surplus crops.

Senator DeConcini. You oppose Waddell Dam.

Dr. Witzeman. As a taxpayer I do, but not from the taxpayer's point of view. Senator, we do not disagree with any new dams built on the Verde River. In our lawsuit, we have many alternatives which include many new types of dams or reconstructions of existing dams on the Verde River.

We do not oppose a dam on the Verde River. In fact, we would not oppose Cliff Dam on the Verde River if its configuration were such that it was not destructive to the environment.

Senator DeConcini. What about a smaller dam?

Dr. Witzeman. Yes, a smaller Cliff Dam could be built if it did have the conservation function. If it had the flood control and the dam safety functions, it would be perfectly acceptable to the Audubon Society, and this is a very key point that I hope to explain to Ms. Lynch tomorrow.

Senator DeConcini. Thank you.

Dr. Witzeman. The point that gets right down to it is the dam safety benefits can be built into either the existing dams on the Verde River or, as you say, a new dam could be built, a new Cliff Dam with dam safety functions. It is the conservation storage. It is the three cotton farms that are the problem with the dam environmentally. It is not the flood control.

We, in fact, in our lawsuit do not object to the flood control. We have in our lawsuit a plan that provides more flood control than Orme Dam, or, rather, than plan 6. Ours would provide 50,000; plan 6 only provides 55,000. We are not recommending it, but we are saying it is available. That is the important thing, is that these options exist.

Senator DeConcini. Let me ask you a question, because I am going to have to leave and I have a number of questions. We have reviewed your statement. I am not familiar with the January 1985 study conducted by the Bureau which you indicate demonstrates that Arizona cities will have more water than they can use.

The opposite seems to be the case. Arizona cities have been willing to contribute substantially to the completion of plan 6 because of the very valuable and necessary water conservation space to be derived from that plan 6.

What we are finding is that agriculture will probably use less water and the cities will probably take more. Can you provide us with a copy of that January 1985 study for the record?

Dr. Witzeman. Yes, and for Ms. Lynch, and, in fact, also, it has been documented in the Republican Gazette that 70 percent of the CAP water over the next 85 years will go to agribusiness.

Senator DeConcini. Do you believe everything you read in the newspapers?

Dr. Witzeman. The Bureau made their best possible projections of how much water they thought a growing population would need. The real problem is that the CAP provides so much water that the cities just aren't growing fast enough to use all of it. They will have to turn 70 percent of it over to agribusiness.

If the cities did grow faster, which their predictions probably are not wrong, why, then maybe something less than 70 percent will go to agribusiness.

The real question you brought up there, when you said the cities have paid for this dam, I would like to comment. This dam's water——

Senator DeConcini. No, I didn't say that they paid for it. I said they have contributed substantially.

Dr. Witzeman. Right, they have contributed; right. Six of the cities have contributed. I would like to comment that I believe that the prime motivation for this contribution is the flood control purposes which, of course, are, as I will say to you, they are not flood control. They are real estate development, and that there is nothing wrong with real estate development. It is very good.

But when it occurs in a flood-prone area as the Rio Salado would remove, they propose 36,000 people, and we are having a bond issue this November. It is a $1 billion bond issue to put 36,000 people down in there.

Now, if Arizona and Miracopa County has $1 billion to put 36,000 people down into there to create 2,000 new acres of river bottomland that is filled with toxic landfills, if they have $1 billion to do that, why can't Arizona build Cliff Dam? It is only $400 million.

Senator DeConcini. Are you a land planner and an engineer? I am not. I just wondered.

Dr. Witzeman. What I would say, if I was a land planner, is this is ill-conceived and foolhardy to put people in a flood-prone area.

Senator DeConcini. You are saying that the Audubon Society is in a position to make a judgment as to planning and developing communities. You have that expertise, I take it?

Dr. Witzeman. I will say this, and I will be happy to submit to you one of the nation's foremost flood hydrologists who lives in Tucson, who was the Tucson flood hydrologist and also the chief of Pima County flood hydrologist for Tucson. His name is Brian Leish. He sent a letter to Governor Babbit about 4 years ago and said that in his opinion, it would be very ill-conceived to be moving 36,000 people down into the flood plain, and he said if you have them there for 50 years, they have a 39-percent chance of being flooded. Brian Leish said that. Would you move into a home that had a 39-percent chance of being flooded?

Senator DeConcini. No; because you couldn't get a permit for building such a house without getting the 100-year flood plan. It is the law in Pima County, and that ought to be the law in Miracopa County. Whether it is or not, I don't know.

I can't continue this discussion. There are 4½ minutes to vote.

Dr. Witzeman. I hope we get a chance to discuss them while I am here.

[The statement follows:]

STATEMENT OF ROBERT WITZEMAN, M.D.

DESTROYING BALD EAGLES TO CREATE COMMERCIAL REAL ESTATE

Cliff Dam floods some of the nation's last remaining Sonoran Desert streamside Bald Eagle habitat solely to enable one of the richest, fastest-growing cities in the nation to garner for itself a riverbottom real estate development courtesy of the U.S. taxpayer.

A WATER WONDERLAND OF GIVEAWAY-PRICED FEDERAL WATER

Phoenix would foolishly place under development hundreds of acres of highly floodprone real estate within the riverbed passing through the heart of that city. It would line the entire bottom of the riverbed with hundreds of acres of water-thirsty Bermuda grass and ornamental lakes. These lakes would have a surface area the equivalent to 1200 football fields. It would use as much water as a city of 100,000 inhabitants just to water the lakes and grass.

Thanks to the largess of the rest of the nation's taxpayers who have financed decades of U.S. Bureau of Reclamation projects here in Arizona, this state has become accustomed to squandering its giveaway priced federal water. Cliff Dam narrows the floodplain with federal dollars to make possible this "water wonderland" real estate insanity.

And the CAP aqueduct needlessly squanders taxpayer-subsidized water upon surplus Arizona croplands which grow the same crops the federal government pays farmers not to grow. We have so much water we don't know what to do with it. The Bureau did a CAP water supply study in January 1985 which showed that the CAP has vastly more water than Arizona cities can use. Over the next 62 years 70% of that federal water will be used by agriculture-which in Arizona is primarily surplus crops. Reclamation's water (and power) subsidies to Arizona agriculture will continue to systematically bankrupt midwestern grain farmers, southern cotton farmers, and all dairy farmers.

Dr. Thomas Power of the Economics Department of the University of Montana calculated each Arizona CAP farmer will receive an average water subsidy of $1,833,000. The Bureau, with its penny-a-ton water and federal hydropower at one/seventh market prices (used for pumping groundwater primarily to grow surplus crops), has enabled Arizona farmers to become the welfare queens of the nation. Arizona leads the nation with dairy subsidies at $226,978 per farmer, subsidies to cotton growers of over $100,000 per farmer, and a net income after expenses greatly exceeding $206,000 per farmer to those farmers growing 97% of the state's crops.

So long as federal water sells at less than a penny a ton here in Arizona, there will never be meaningful incentives for water conservation. We know how to funnel federal water dollars from Washington at the expense of the unwitting taxpayer who thinks we have a water shortage.

The Bureau was authorized in 1902 as part of a homesteading bill to reclaim arid lands in the West. It has run out of cost-effective projects which fulfill national economic goals. Some two/thirds of Reclamation farmlands grow surplus crops, systematically putting midwestern and southern and northeastern farmers out of business. Even worse, these primarily surplus Reclamation farmlands work at cross purposes to the multi-billion dollar federal crop reduction programs. With Cliff Dam the Bureau is desperately attempting to keep their agency alive with bogus "flood control" projects which would "reclaim" dangerous, floodplain real estate (for commercial and residential purposes).

CLIFF DAM'S OWN LOVE CANAL PROJECT

This floodplain real estate scheme of Cliff Dam, called Rio Salado, would move 36,000 people deep into one of the most polluted riverbeds in the West. This Salt River is the longtime historical dumping ground of metropolitan

Phoenix- a veritable 'Love Canal' riverbed studded with highly toxic, superfund-eligible, landfills. Methane generation from these landfills presents fire and explosion hazards for the thousands of people and businesses which would be moved into this development.

ARIZONA'S FLOODPLAIN INSANITY FINANCED BY UNCLE SUGAR

Cliff Dam would saddle U.S. (and local) taxpayers with huge flood liability costs. This proposed development would move thousands of newcomers onto island-like structures foolishly situated in the middle of the river- as well as along the edge of this major river. The government (Bureau of Reclamation) dambuilders stated that if Phoenix had a flood such as it had 96 years ago, damages to the real estate scheme would be extensive. The Bureau pointed out in the Cliff Dam Final Environmental Impact Statement that twice as much water would be dumped on top of this multi-billion dollar extravaganza as the Salt River channel could accommodate.

Litigation now underway, and introduced by a coalition of most of the nation's environmental groups, has indicated that far less costly alternatives than Cliff Dam are available to achieve the water storage and dam safety alternatives.

CLIFF DAM'S ALLEGED FLOOD CONTROL FUNCTION

Cliff's alleged flood control function as of November 1986 officially became obsolete. Conservationists and taxpayers alike always said this flood control was a hoax to disguise this municipal real estate development- and this study proves that point.

These recent Army Corps FEMA maps indicate there is essentially no damage to property within the current legal 100 year floodplain through the entire metropolitan Phoenix area. The much acclaimed 1985 Arizona-federal costsharing agreement in which Arizona offered to pay 15% of Cliff Dam has become invalid.

DAM "SAFETY" AND BUREAUCRATIC ACTIVISM

Cliff Dam, and the so-called Plan 6 alternative to the Bureau's proposed Orme Dam, personifies strident bureaucratic activism. This Bureau of Reclamation dam project was authorized by Congress in 1968 for $42 million. Nineteen years of unrelenting agency activism to create a product to subsidize floodplain real estate development and floodplain landowerners has taken place since then. Even the Bureau admits the main purpose of their dam is floodplain real estate development. They state that 60% of the flood control benefits of Cliff Dam are derived from the increased valuations of the floodplain real estate. Only 40% are for inundation damage reduction. Since the time of that analysis the inundation damages have been virtually eliminated- as was discussed in the preceding paragraph.

The GAO in March 1987 and the Interior Department's Inspector General in April 1986 blew the whistle on the Bureau. They issued reports stating that the Bureau exceeded their Congressional cost ceiling by 640% on this Plan 6 real estate orgy. The price should now not exceed $166 million indexed for inflation. In fact, today it is a grandiose four-dam $1.1 billion grab bag of goodies. The legal staffs of both agencies exposed the Bureau's unlawful attempt to use Safety of Dams Act funds for building Cliff Dam. Those watchdog agencies pointed out that Congress intended Safety of Dams monies to be used to repair unsafe existing dams.

This is bureaucratic activism on a scale which matches $500 monkey wrenches or $400 toilet seats. For example, the Bureau's dam safety repairs for the Verde River dams would cost $279 million. Yet the current lawsuit has used the Bureau's own documents to show safety could be solved for as little as $11 million.

WATER STORAGE ALTERNATIVES TO CLIFF DAM

There are many less costly, environmentally non-destructive alternatives for obtaining the paltry 15,800 acre-feet which Cliff Dam yields. Groundwater recharge of Salt and Verde River water would yield three times as much water as Cliff for practically no cost. Raising Roosevelt Dam an additional 15 ft. in conjunction with groundwater recharge would produce three times more water than Cliff and only cost $55 million- a much lower cost per acre-foot than Cliff.

Retiring surplus Arizona croplands would provide vastly more water than Cliff and save the nation's taxpayers the huge subsidy payments. About two/thirds of Arizona croplands grow such surplus crops. Simply retiring three 1000 acre cotton farms in Arizona would provide the same amount of water as Cliff and still leave some 400,000 acres of that surplus crop in Arizona.

In summary, Congress and the nation's taxpayers should forthwith deposit Cliff Dam and its floodprone, landfill-polluted real estate scheme on the bureaucratic garbage heap.

NEW YORK AND NEW JERSEY WATER RESOURCE PROJECTS

Senator DECONCINI. I am sorry, but I must conclude the hearing, and I apologize to those from New York and New Jersey who have been waiting.

Be assured we have your statements and they will be made part of the record. Again, I regret that I must conclude the hearing at this point.

[The statements follow:]

Statement of the New Jersey Department of Commerce and Economic Development and the Maritime Advisory Council

REPRESENTING ALSO:

BAYONNE CHAMBER OF COMMERCE (NJ)
BOARD OF PILOT COMMISSIONERS, STATE OF NEW JERSEY
CITY OF SALEM MUNICIPAL PORT AUTHORITY (NJ)
DELAWARE RIVER AND BAY AUTHORITY
DELAWARE RIVER PORT AUTHORITY
HUDSON COUNTY CHAMBER OF COMMERCE (NJ)
INTERNATIONAL UNION OF OPERATING ENGINEERS
JOINT EXECUTIVE COMMITTEE FOR THE IMPROVEMENT OF THE DELAWARE (PA)
MARITIME ASSOCIATION OF THE PORT OF NEW YORK AND NEW JERSEY
MARINE TRADES ASSOCIATION OF NEW JERSEY
NEW JERSEY ALLIANCE FOR ACTION
NEW YORK-NEW JERSEY PORT PROMOTION ASSOCIATION
PENJERDEL (PA, NJ, DEL) COUNCIL
TOWBOAT AND HARBOR CARRIERS ASSOCIATION OF NEW YORK AND NEW JERSEY
PILOTS ASSOCIATION FOR THE BAY AND RIVER DELAWARE
PORT AUTHORITY OF NEW YORK AND NEW JERSEY
SAVE OUR PORT COALITION (NY, NJ)
SOUTH JERSEY PORT CORPORATION
UNITED NEW JERSEY SANDY HOOK PILOTS BENEVOLENT ASSOCIATION
UNITED NEW YORK SANDY HOOK PILOTS BENEVOLENT ASSOCIATION

Mr. Chairman and members of the Committee, I am Borden R. Putnam, Commissioner of the New Jersey Department of Commerce and Economic Development and Honorary Chairman of the New Jersey Maritime Advisory Council. This Council was established within our Office of Business Advocacy to emphasize New Jersey's position as a Maritime State and that industry's impact on our economy.

I am here today to endorse that which is presently included in the Presidents budget and will address those Navigation, Flood Control and water supply projects, which if not sufficiently funded, will have an adverse effect on the economic well being of our state.

Summary of Recommendations

In addition to the projects which we support as funded in the budget, the New Jersey Maritime Advisory Council wishes to recommend an additional appropriation of $9,918,000 in Federal funds in FY'88 allocated among nineteen projects. The federal budget allotment for these nineteen projects is $3,052,000. The following statement shows project recommendations:

PROJECT	BUDGET REQUEST	LOCAL INTEREST
FLOOD CONTROL		
ABSECON ISLAND, NJ	----0----	250,000
BRIGANTINE ISLAND, NJ	----0----	100,000
CAPE MAY POINT, NJ	----0----	100,000
DELAWARE BAY SHORELINE	----0----	200,000
HACKENSACK RIVER BASIN NJ & NY	300,000	700,000
PASSAIC RIVER BASIN STUDY, NJ & NY (PHASE I)	1,152,000	3,552,000
RAHWAY RIVER, VAN WINKLESBROOK, SPRINGFIELD, NJ	----0----	200,000
RARITAN RIVER BASIN GREEN BROOK SUB-BASIN, NJ	1,400,000	1,800,000
SANDY HOOK TO BARNEGAT INLET, NJ (SECTION I)	----0----	1,000,000
SANDY HOOK TO BARNEGAT INLET, NJ (SECTION II)	----0----	2,000,000
NAVIGATION		
ARTHUR KILL TO CARTERET, NJ	200,000	1,000,000
CAPE MAY INLET TO LOWER TWP., NJ	----0----	913,000
CORSON INLET, NJ	----0----	120,000
DELAWARE RIVER DRIFT REMOVAL	----0----	135,000
HEREFORD INLET, NJ	----0----	100,000
NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NY & NJ	INCREASE CONGRESSIONAL CAP FROM $28.725M TO $55M	
PORT JERSEY CHANNEL, NJ	----0----	300,000
TOWNSEND INLET, NJ	----0----	200,000
WATER SUPPLY		
SECTION 22 PLANNING PROGRAM	----0----	300,000
TOTAL	3,052,000	12,970,000

ARTHUR KILL CHANNEL-HOWLAND HOOK MARINE TERMINAL, NY & NJ (PE&D)

Arthur Kill is located within the Port of New York and New Jersey and annually handles about 1.5 million tons of cargo even though inadequate avigational depths inhibit passage by existing deep draft ocean going vessels. In 1985 the Division Engineer issued a recommendation to deepen the existing 35-foot navigation channel to a 41-foot deep channel for a distance of 2.1 miles with a 40-foot deep channel for an additional distance of one mile. We wish to support the Fiscal Year 1988 Budget Request of $323,000 which is needed to complete this preconstruction engineering and design effort which when constructed will allow for more effective transportation of bulk products to terminals in the area.

ARTHUR KILL CHANNEL EXTENSION NEW JERSEY AND NEW YORK (STUDY)

Although we were pleased to see this project included in the FY'88 budget, it was our belief that the project would be designated a "post Authorization non-cost shared General Design Memorandum" effort and not a "cost shared feasibility study." The already heavily industrialized Arthur Kill Extension handles more tonnage than the preceeding Howlad Hook project. Therefore, it is obvious that the benefit-to-cost ratio must be at least equal or greater than the 4 to 1 ratio of the preceding reach.

We wish to request that an additional $800,000 be provided for this project in FY'88 to promote the preferred post authorization preconstruction gineering & design phase and advance the project towards construction with four years.

CAPE MAY INLET TO LOWER TOWNSHIP, NEW JERSEY (CONSTRUCTION)

This project is important to the shoreline both in and below Cape May. Cape May has suffered severe erosion since the construction of the Cape May Inlet jetties in 1911. This has been to the detriment of the recreation industry, boating and fishing and is responsible for repetitive storm related flood damages. The Corps of Engineers completed the Phase II Advance Engineering & Design studies for this project in July, 1983 and recommended a project to restore the damage caused to the Cape May navigation jetties. We ask that this project, which provides for groins and beachfill, be appropriated in the amount of $913,000 to begin construction.

CORSON INLET AND LUDLAM BEACH, NEW JERSEY (PRECONSTRUCTION ENGINEERING & DESIGN)

The existing project provides for jetties, a deposition basin, an inlet channel 300 feet wide by 12 feet deep to the New Jersey Intracoastal Waterway; a bulkhead and backfill at Strathmere; placement of beachfill; removal of existing timber piling; periodic nourishment of the beaches for flood control; inclusion of two existing groins; construction of ten additional groins as of wo existing groins; construction of ten additional groins as required; and ppurtenant works for jetty and bulkhead fishing.

Since no work has been accomplished for this existing project, and local interests have constructed five groins and extended another, we wish to recommend for consideration that $120,000 be appropriated to initiate the preconstruction engineering and design phase

DELAWARE RIVER COMPREHENSIVE NAVIGATION STUDY NJ, PA & DEL (STUDY)

The Delaware River Navigation System includes six deep-draft navigation projects serving the Ports of Philadelphia, Pennsylvania; Camden, New Jersey; Trenton, New Jersey; and Wilmington, Delaware. These ports collectively transport more than 114 million tons of cargo annually, support nearly 100,000 jobs and provide a much needed economic stimulus to the entire region.

We wish to support the Budget Recommendation of $780,000 to continue the Delaware River comprehensive Navigation Study and continue the studies to deepen both the Maurice River and the Salem River in the New Jersey, and investigate improvements throughout the entire study area.

DELAWARE RIVER & TRIBUTARY DRIFT REMOVAL (STUDY)

This project covers the Delaware River, including shores and tributaries, and will establish a survey to determine the justification for the removal of rift in navigable waters which pose a very real threat to commercial, public nd recreational vessels.

The total study cost to investigate this project is $570,000. It is the local interest recommendation that $135,000 be provided to initiate the reconnaissance phase of this study project.

DELAWARE RIVER VICINITY OF CAMDEN, NJ (BECKETT STREET TERMINAL), (PE&D)

The Beckett Street Terminal is located in Camden, New Jersey on the east bank of the Delaware River. At present there is inadequate depth to allow safe transit of the deep-draft vessels that ship dry bulk cargo through the Beckett Street Terminal. The Corps has studied and recommended a deepening to 37 feet in order to permit efficient transit of deep-draft vessels.

We wish to express our support for the Fiscal Year 1988 Budget Request of $170,000 to initiate preconstruction engineering and design for this project and are pleased that is scheduled for completion in March, 1990.

REFORD INLET & FIVE MILE BEACH, NEW JERSEY (STUDY)

This project, as authorized for the Phase I Design Memorandum Stage of Advanced Engineering & Design by the Water Resources Development Act of 1976, proposes jetties at Hereford Inlet, a deposition basin, an inlet channel beachfill, dune construction, bulkheading, construction of groins along the inlet frontage and maintenance of proposed groins and bulkheads. Since no work has been undertaken for this authorized project, we wish to recommend for consideration that $100,000 be appropriated to initiate the preconstruction engineering and design phase of this $1,240,000 total study cost project.

KILL VAN KULL AND NEWARK BAY CHANNEL, NEW YORK AND NEW JERSEY (CONSTRUCTION)

This is a navigation project to deepen the existing 35-foot channels in the Kill Van Kull and Newark Bay to 45 feet below mean low water (MLW). The project would serve Port Newark and Port Elizabeth marine terminals with several widenings and a turning basin.

We wish to fully support the Budget Request of $52,000,000 for this long awaited project, which has been authorized for construction by the Water Resources Development Act of 1986. It's effectiveness is demonstrated by a 7.2 to 1 benefit-to-cost ratio.

NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NY & NJ (CONSTRUCTION)

This project calls for the collection and removal of more than 29 million cubic feet of drift from derelict vessels, and non-repairable piers and waterfront structures. It covers all of the Port of New York and New Jersey.

The recommended Budget Request of $4,880,000 is welcomed and supported. However, we would like to point out that the completion of this ongoing project is limited to $28,725,000 by Section 116, Water Resources Development Act of 1976. We wish to recommend that Congress consider increasing the present project appropriation cap to $55,000,000 so that the project may be properly completed in its entirety.

PORT JERSEY CHANNEL, NEW JERSEY (PRECONSTRUCTION ENGINEERING & DESIGN)

This project will deepen a 35-foot access channel (non-federal) to a 41-foot channel (federal) providing safe and economical use of this waterway at all stages of tide. The port Jersey Access Channel presently serves the Global Maring Container Terminal, which is turn serves 10 shipping lines. In 1986, this facility handled 319 vessel arrivals with 192,791 container units. This cargo activity alone generates 493 jobs and a payroll of $19.6 million.

Since the Corps will be ready to undertake its General Design Memorandum for this project in FY'88, we wish to request an appropriation of $300,000 for this project in Fiscal Year 1988 which will allow the preconstruction gineering and design work to begin without a potential six-month delay.

TOWNSEND INLET & SEVEN MILE BEACH, NJ (PRECONSTRUCTION ENGINEERING & DESIGN)

The existing project provides for jetties, a deposition basin, an inlet channel 300 feet wide by 12 feet deep to the New Jersey Intracoastal Waterway, two groins and beach flood control fill at Avalon. Since no work has been accomplished for this existing project, and local interests have constructed two groins and the sough jetty at Townsend Inlet, we wish to recommend for consideration that $200,000 be appropriated to initiate the preconstruction engineering and design phase of the $500,000 total study project costs.

ABSECON ISLAND, NEW JERSEY (PRECONSTRUCTION ENGINEERING AND DESIGN)

Hurricane "Gloria", in September 1985, resulted in $6.6 million in damages and Absecon Island was once again included in the presidential declaration of a Federal Disaster area. In view of this, we wish to recommend that $250,000 be provided in Fiscal Year 1988 to begin preconstruction engineering and design work for this flood control project.

BRIGANTINE ISLAND, NEW JERSEY (PRECONSTRUCTION ENGINEERING AND DESIGN)

The proposed plan for Brigantine Island provides for a berm 10 feet above mean low water, the improvement of six groins and one groin extension recently onstructed by the State of New Jersey.

Although this project is authorized for Phase I Advanced Engineering and Design only, no work has been accomplished. We therefore wish to recommend an appropriation of $100,000 in Fiscal Year 1988 so that the preconstruction engineering and design phase of this $338,000 study effort may begin.

CAPE MAY POINT, NEW JERSEY (PRECONSTRUCTION ENGINEERING AND DESIGN)

The Cape May Point project provides for the placement of beachfill and provision of a dune with sand fence and grass. This project also includes connecting dikes on the eastern and western boundaries of the Borough of Cape May; the construction of five new groins, and extension of three others to provide for flood control

Since no work progressed on this plan, we wish to recommend for consideration that a modest $100,000 appropriation be made to initiate the proconstruction engineering & design phase of this $237,000 general investigation study.

DELAWARE BAY SHORELINE, NJ & DEL (PRECONSTRUCTION ENGINEERING AND DESIGN)

The goals of this study are to provide information on the long-term shoreline changes which will serve as a basis for sound coastal planning ecisions. Since the data is urgently needed in order to deal with the beach rosion/flooding problems in the Delaware Bay area and to implement remedial measures, we wish to request ant appropriation of $200,000 in Fiscal Year 1988 for the preconstruction engineering and design phase of this study.

HACKENSACK RIVER BASIN, NEW JERSEY AND NEW YORK (STUDY)

This study will determine the need for flood control improvements in the Hackensack River Basin including the Meadowlands. It is estimated that over $430,000,000 in damage would result from a 100-year tidal flood.

The $300,000 for a study of the Hackensack River Basin flood control feasibility is one item which we support. However, we would like to point out that New Jersey views this particular survey as an ongoing priority which should be funded with an additional $400,000 in Fiscal Year 1988 to continue the feasibility study.

PASSAIC RIVER BASIN, NEW JERSEY AND NEW YORK (STUDY)

While it is particularly gratifying to see funding in the Fiscal Year "88 Budget Request for this project, we are asking that an additional $2 million be provided to allow the Corps of Engineers to begin the engineering and design phase of the mainstream Passaic River Flood Control Project.

A provision of Water Resources Development Act of 1986 was a $50 million roject to acquire flood-prone residential properties in the Passaic River asin. This activity, commonly referred to as a "buoy-out", will serve to reduce flood damages by buying frequently flooded properties and removing the structures. The State of New Jersey has already undertaken such a project through a $15 million appropriation by the New Jersey Legislature and request an appropriation of $400,000 for the Corps of Engineers to plan how the buy-out will take place.

RAHWAY RIVER AND VAN WINKLES BROOK, SPRINGFIELD, NEW JERSEY (PE&D)

This flood control project is located in Springfield, New Jersey, and consists of channel excavation, construction of levees, floodwalls, a ponding area, and alteration of bridges. The total project is estimated at $ 17.5 million and the planning and engineering phase of this project is not presently funded.

We wish to request that locally constructed flood control works at Springfield, New Jersey be considered for project qualification purposes and that funds in the amount of $200,000 should be appropriated and remain available until expended, to resume the preconstruction engineering and design ork for this project.

RARITAN RIVER BASIN, GREENBROOK SUB-BASIN (PE&D)

While we are supportive of the $1.4 million designated in the FY'88 Budget Request for the preconstruction engineering and design of this flood control project, we would like to point out that there is need for an additional appropriation of $400,000 for this project to be used as follows:

Two hundred thousand dollars would allow the Corps of Engineers to continue to develop a local land use planning model for the Matchaponix Basin and two hundred thousand dollars is needed for the development of a flood warning system for the entire Raritan River Basin.

SANDY HOOK TO BARNEGAT INLET, (Section I) SEA BRIGHT TO OCEAN TWP. (PE&D)

This beach erosion/flood control project provides for Federal participation in the restoration and protection of three sections of the New Jersey shore from Sea Bright to Seaside Park, a 12 mile stretch. Local communities and the State Legislature have spent $6.5 million to date on this project and have programmed an additional $5 million for reconstruction of the seawall, which will be credited to the non-federal share.

We wish to request that the sum of $1 million be appropriated to this roject in Fiscal Year 1988. Preconstruction engineering will do much toward olving this serious flood/erosion problem that threatens the residents and businesses of these coastal communities.

SANDY HOOK TO BARNEGAT INLET, (Section II) ASBURY PARK TO MANASQUAN (PE&D)

The project area lies along the Atlantic Ocean shoreline of New Jersey in Monmouth and Ocean Counties, between Sandy Hook to the north and Barnegat Inlet to the south. Erosion from storms in 1962 and 1984 have seriously reduced the width of most beaches in the study area with subsequent exposure of the shore communities to millions of dollars in flood and storm damages.

We wish to request that the sum of $2,000,000 be appropriated to this project in Fiscal Year 1988 so that the necessary preconstruction engineering and design phase may be allowed to continue.

SECTION 22 WATER SUPPLY, NEW JERSEY (PLANNING PROGRAM)

This project was established to provide funding for the coordination of studies with other agencies. Funds requested are to be utilized by the Corps of Engineers to perform engineering evaluations of water supply problems within the State of New Jersey.

This planning program has provided meaningful levels of funding for which New Jersey is most appreciative. However, there are several planing projects for which we wish to request funds in FY'88 through this program. The total funds requested for the projects proposed are $300,000.

# # #

On behalf of the Maritime Advisory Council, the civic, trade, port, labor and governmental organizations listed on the cover sheet of this statement which we represent and myself, let me thank you for the courtesy of presenting our recommendations to you.

STATEMENT OF MARITIME ADVISORY COUNCIL OF NEW JERSEY

Dear Members of of the United States Congress:

From its earliest origins, New Jersey has been a state heavily dependent on maritime commerce and activity. Annually, our waterways handle more than a quarter billion tons of cargo, yielding more than a billion dollars in customs revenue.

Our many inland waterways and rivers are also important for our commerce and recreation. Unfortunately, one of the results of our growth is that flooding in our state has become an increasing problem.

Development of new water supply for New Jersey and the Delaware River Basin Region is also an issue important to our future.

These are just some of the key questions to be addressed through New Jersey's Civil Works Appropriations for Fiscal Year 1988. The Maritime Advisory Council of New Jersey, in supporting these important projects, has also given careful thought and review to other vital efforts in the areas of navigation, flood control and water supply. We ask that you give careful consideration to our requests for additional funding in the FY '88 budget.

This summary of important New Jersey civil works projects is aimed at giving members of both the House and Senate Appropriations Committees a greater understanding of our state's unique needs.

We look forward to working with you in the development of New Jersey's budget requests.

NAVIGATION PROJECTS

ARTHUR KILL CHANNEL EXTENSION
NEW JERSEY AND NEW YORK
(STUDY)

FY'88 Budget Request	$ 200,000
Local Interest Recommendation	$1,000,000

Project Description

This study will focus on the portion of the Arthur Kill from Howland Hook, New York, south to Carteret, New Jersey. The 35-foot deep existing Federal project does not allow the full loading of liquid and dry bulk cargo ships destined for shoreside facilities. This situation requires that large ocean-going vessels either light load (underutilizing ship capacity at a substantial loss of economy), or perform expensive off-shore lightering operations in deeper waters outside this channel. Deeper channels would streamline operations and realize considerable transportation cost savings. Local interests in both New York and New Jersey are requesting these funds to enhance underutilized port properties and for future accommodation of expanded facilities.

Six deep-draft bulk facilities along the Arthur Kill extension annually handle in excess of 10 million tons of cargo. Petroleum, petrochemicals, speciality chemicals, sulphur and cement are carried to these terminals. The large, modern vessels would immediately benefit from substantial savings and safer navigation if the existing channel were deeper.

Local Interest Recommendation

Although we were pleased to see this project included in the FY'88 budget, it was our belief that the project would be designated a "post authorization non-cost shared General Design Memorandum" effort and not a "cost shared feasibility study." While we support this project, this recent development appears to counter the congressional intent of the Water Resources Development Act of 1986 which directly authorizes this project for construction.

A comparison of this shorter and narrower project with the preceding Howland Hook construction increment leaves no doubt that this project is justified. The already heavily industrialized Arthur Kill Extension handles more tonnage than the Howland Hook project. Therefore, it is obvious that the Arthur Kill Extension benefit-to-cost ratio must be at least equal or greater than the 4 to 1 ratio of the preceding reach.

We wish to request that an additional $800,000 be provided for this project in FY'88 to promote the preferred post authorization preconstruction engineering & design phase. This would advance the project towards construction within four years, versus the present feasibility phase eight-year construction start.

ARTHUR KILL CHANNEL-HOWLAND HOOK MARINE TERMINAL, NEW YORK AND NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ 323,000
Local Interest Recommendation	$ 323,000

Project Description

Arthur Kill, a tidal strait connecting Raritan Bay with Newark Bay, is located within the Port of New York and New Jersey. Annually, this reach of strait handles about 1.5 million tons of cargo.

Inadequate navigational depths inhibits passage by existing deep draft ocean going vessels. Arriving tankers must lighter off to barges in deeper New York Harbor anchorages before they reach entrance channel depth. This unfortunately is necessary in order to reduce drafts to safely accommodate the 35 foot deep shore channels.

Because container vessels cannot lighter in these anchorages, many travel at far less than full capacity during long ocean voyages. The significantly increased costs are both unproductive and unnecessary.

The original study was authorized and adopted in May 1979. In 1985, the Division Engineer issued a recommendation to deepen the existing 35-foot navigation channel to a 41-foot deep channel for a distance of 2.1 miles with a 40-foot deep channel for an additional distance of one mile.

We wish to support the Fiscal Year 1988 Budget Request of $323,000 which are needed to complete this preconstruction engineering and design effort.

Major private users, such as the Exxon refinery in Bayway, New Jersey and the Gulfport Terminal on the Staten Island shoreline are dependent upon this channel. Deepening and widening of this channel is vital to improving both ship handling capabilities and safety in the Arthur Kill. The project will allow for more effective transportation of bulk products to terminals in the area.

BARNEGAT INLET, NEW JERSEY
(CONSTRUCTION)

Project Description

FY'88 Budget Request	$6,000,000
Local Interest Recommendation	$6,000,000

Channel shoaling, wave activity and numerous marine hazards have created dangerous navigational problems at the Barnegat Inlet, which is located on the Atlantic Coast of New Jersey in Ocean County. These are serious shortcomings that impose limitations on the effectiveness of safe access through an inlet with over 800,000 annual transits.

Since completion of the existing Federal project in 1940, approximately $8 million has been appropriated in an attempt to stabilize conditions. This has resulted in only short-term maintenance improvements. New construction is necessary to modify the existing Federal navigation project. It will also initiate construction of a realigned south jetty and a wider and deeper navigation channel. This work is estimated to cost $6,000,000.

Presently, the only approach to the inlet is from the north along Island Beach. Due to shoaling, breakers occur across the entire outer bar, exposing all vessels to possible impact by severe waves as they enter the inlet entrance. Vessels are also in constant jeopardy of being capsized or pushed across the north jetty because of the current navigating conditions.

Local Interest Recommendation

The proposed modification and construction of a new jetty and improved navigation channel is necessary to correct channel shoaling, wave activity and dangerous hazards which have been responsible for the loss of 11 lives at the inlet over the last five-year period.

The proposed improvement plan will reduce navigation hazards and provide all mariners with safe access through the inlet. Asdesigned, the project will reduce shoaling and maintenance dredging costs over the long term. This project represents a sound, cost-effective investment for safer mariner navigation in the area.

We support the Fiscal Year 1988 Budget Request of $6,000,000 to continue the construction work of this improvement plan.

CAPE MAY INLET TO LOWER TOWNSHIP, NEW JERSEY

(CONSTRUCTION)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 913,000

Project Description

The Cape May Inlet project was authorized by the Water Resources Development Act of 1976. The recommended project consists of a beachwater weir at Cape May Inlet with construction of two new groins, beachfill, and maintenance of the two new and seven existing groins. Beach nourishment material would be obtained periodically from a deposition basin located on the northeast side of the inlet and a shoreline monitoring program for Lower Township.

The project is important to the shoreline both in and below Cape May. Cape May has suffered severe erosion since the construction of the Cape May Inlet jetties in 1911. This has been to the detriment of the recreation industry, boating and fishing and is responsible for repetitive storm related damages.

Local Interest Recommendation

The Corps of Engineers completed the Phase II Advance Engineering & Design studies for this project in July, 1983 and recommended a project to restore the damage caused to the Cape May navigation jetties. They recommended that this work be done and we ask that this project, which provides for groins and beachfill, be appropriated in the amount of $913,000. This will permit new construction to be undertaken as part of this project's total construction cost of $17.9 million

CORSON INLET AND LUDLAM BEACH, NEW JERSEY (PRECONSTRUCTION ENGINEERING & DESIGN)

FY'88 Budget Request	$ -0-
Local Interest Recommendation	$ 120,000

Project Description

The existing project, adopted under authority of the Flood Control Act of 1965, provides for jetties, a deposition basin, an inlet channel 300 feet wide by 12 feet deep to the New Jersey Intracoastal Waterway; a bulkhead and backfill at Strathmere; placement of beachfill; removal of existing timber piling; periodic nourishment of the beaches for flood control; inclusion of two existing groins; construction of ten additional groins as required; and appurtenant works for jetty and bulkhead fishing.

Local Interest Recommendation

Since no work has been accomplished for this existing project, and local interests have constructed five groins and extended another, we wish to recommend for consideration that $120,000 be appropriated to initiate the preconstruction engineering and design phase of the total study cost of $535,000.

DELAWARE RIVER COMPREHENSIVE NAVIGATION STUDY
NEW JERSEY, PENNSYLVANIA, AND DELAWARE
(STUDY)

FY'88 Budget Request	$ 780,000
Local Interest Recommendation	$ 780,000

Project Description

The Delaware River Navigation System includes six deep-draft navigation projects serving the Ports of Philadelphia, Pennsylvania; Camden, New Jersey; Trenton, New Jersey; and Wilmington, Delaware. These ports collectively transport more than 114 million tons of cargo annually, support nearly 100,000 jobs and provide a much needed economic stimulus to the entire region. This system also serves naval vessels at the Philadelphia Naval Base.

The representatives of port facilities utilizing the Delaware River cite the need for deeper channels and improved navigation facilities to fully accommodate current and future vessel movements. An average of nine million tons of cargo are lightered into barges due to the restrictive 40-foot channel depths.

Local Interest Recommendation

We wish to support the Budget Recommendation of $780,000 to continue the Delaware River Comprehensive Navigation Study and continue the studies to deepen both the Maurice River and the Salem River in New Jersey, and investigate improvements throughout the entire study area.

DELAWARE RIVER & TRIBUTARY DRIFT REMOVAL
(STUDY)

FY'88 Budget Request	$ -0-
Local Interest Recommendation	$ 135,000

Project Description

This project covers the Delaware River, including shores and tributaries, and will establish a survey to determine the justification for the removal of drift in navigable waters. The deteriorated piers, wharves and non-repairable structures along the shores pose a very real threat to commercial, public and recreational vessels. Annually, many vessels collide with drift, causing damage to propellers, shafts and hulls.

Local Interest Recommendation

The total study cost to investigate this project is $570,000. It is the local interest recommendation that $135,000 be provided to initiate the reconnaissance phase of this study project, in order to fully document results and seek future project authorization.

DELAWARE RIVER VICINITY OF CAMDEN, NEW JERSEY
(BECKETT STREET TERMINAL)
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY'88 Budget Request	$ 170,000
Local Interest Recommendation	$ 170,000

Project Description

The Beckett Street Terminal is located in Camden, New Jersey on the east bank of the Delaware River, opposite the City of Philadelphia. The Beckett Street Terminal's authorized depth ranges from 18 to 37 feet. Existing Corps' projects (Delaware River/Philadelphia to the Sea and Delaware River/Camden Vicinity) provide four miles of access along the City of Camden's waterfront. At present, there is inadequate depth to allow safe transit of the deep-draft vessels that ship dry bulk cargo to the Beckett Street Terminal. As a result of these inadequate depths, costly alternatives such as lightering and light loading are utilized. There is also dependence on high tides as well to handle the shipping load. With dry bulk and general cargo fleet vessels ever increasing in size, this problem is expected to worsen.

After the situation was studied, the Corps' recommended improvement allows for deepening the channel from 37 to 40 feet in order to permit efficient transit of deep-draft vessels. The plan of improvement includes dredging a trapezoidal approach channel to a depth of 40 feet, with a width of 1,100 feet and lengths of 4,400 and 1,450 feet along the Camden waterfront. Funds allocated would initiate preconstruction engineering and design which would include hydrographic surveys, economic, environmental, and social impact studies and the initiation of detailed design calculations.

Local Interest Recommendation

Annually, 1.1 million tons of bulk cargo, including coal, scrap metal, lumber, gypsum, iron ore and titanium slag are handled at the Beckett Street Terminal, a South Jersey Port Corporation facility.

The investment in this area is particularly important since the City of Camden, one of the most economically depressed urban areas of our country, could receive an additional economic boost through millions of dollars in related revenues and hundreds of full-time jobs.

We wish to express our support for the Fiscal Year 1988 Budget Request of $170,000 to initiate preconstruction engineering and design for this project and are pleased that it is scheduled for completion in March, 1990.

GREAT EGG HARBOR & PECK BEACH, NEW JERSEY
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY'88 Budget Request	$ 132,000
Local Interest Recommendation	$ 132,000

Project Description

This project provides for the modification of the existing beach erosion control project at Ocean City, New Jersey. It will provide for jetties; a deposition basin; a bulkhead; backfill and revetments; and an inlet channel 300 feet wide by 12 feet deep below mean low water (MLW).

Also part of the project is a 100-foot wide by six feet deep approach to the New Jersey Intracoastal Waterway; placement of beachfill; inclusion of 11 existing groins; periodic nourishment of the beaches and work for jetty and bulkhead fishing.

Local Interest Recommendation

In 1982 and 1983, the State of New Jersey indicated renewed interest in a scaled down version of this project, based upon the findings of their Shore Protection Master Plan. A new source of funds also resulted from a bond issue referendum passed by New Jersey voters in 1983.

We, therefore, wish to support the budget recommendation of $132,000 to provide the funding to resume the advanced engineering and design phase and conversion of this project to a navigation and flood control endeavor.

HEREFORD INLET & FIVE MILE BEACH, NEW JERSEY
(STUDY)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 100,000

Project Description

This project, as authorized for the Phase I Design Memorandum Stage of Advanced Engineering & Design by the Water Resources Development Act of 1976, proposes jetties at Hereford Inlet; a deposition basin and an inlet channel. The inlet channel, 300 feet wide by 12 feet deep, extends from the ocean to inside the inlet; and from that point a channel 6 feet deep by 100 feet wide would extend to the New Jersey Intracoastal Waterway. This project also provides for the placement of beachfill, dune construction, bulkheading, construction of groins along the inlet frontage and maintenance of proposed groins and bulkheads.

Local Interest Recommendation

Since no work has been undertaken for this authorized project, we wish to recommend for consideration that $100,000 be appropriated to initiate the preconstruction engineering and design phase of this $1,240,000 total study cost.

KILL VAN KULL AND NEWARK BAY CHANNEL, NEW YORK AND NEW JERSEY (CONSTRUCTION)

FY'88 Budget Request	$52,000,000
Local Interest Recommendation	$52,000,000

Project Description

This is a navigation project to deepen the existing 35-foot channels in the Kill Van Kull and Newark Bay to 45 feet below mean low water (MLW). The project would serve Port Newark and Port Elizabeth marine terminals with several widenings and a turning basin. The work covers Staten Island, New York; and Jersey City, Bayonne, Elizabeth, and Newark, New Jersey.

The Port Authority of New York and New Jersey, the local cooperating agency for this project, wishes to take construction in stages, with the first phase going to 40 feet. This project will immeasurably benefit Port Newark and Port Elizabeth, which together comprise the nation's largest container port.

The present 35-foot channels in the Kill Van Kull and Newark Bay preclude modern ocean voyage container ships from fully loading. Substantially increased shipping costs, if allowed to continue, will discourage fleets with larger draft vessels from ever utilizing these facilities.

Local Interest Recommendation

We wish to fully support the Budget Request of $52,000,000 for this long awaited project, which has been authorized for construction by the Water Resources Development Act of 1986. It's effectiveness is demonstrated by a 7.2 to 1 benefit-to-cost ratio.

NEW JERSEY INTRACOASTAL WATERWAY SHREWSBURY RIVER TO DELAWARE BAY (STUDY)

FY'88 Budget Request	$ 50,000
Local Interest Recommendation	$ 50,000

Project Description

Presently, the New Jersey Intracoastal Waterway is maintained at a depth of six feet. This depth was determined by the State of New Jersey prior to the Federal project authorization in 1945. New Jersey's portion of the channel, which extends 117 miles along the coast of New Jersey from Manasquan Inlet to the Delaware Bay, is easily the most restrictive link in the Inland Waterway between New England and Florida.

The Federal project has authorized a 12-foot depth and 1,100 feet width from the Atlantic Ocean through Manasquan Inlet and River, the Point Pleasant Canal, the Intracoastal Waterway and the Cape May Harbor to Delaware Bay Canal. Included at the request of local interests is the extension of the project from Manasquan to the Shrewsbury River in Monmouth County.

Although authorized, the project remains unconstructed due to unresolved and difficult wetlands and bridge problems, primarily in the Atlantic City and Longport, New Jersey areas.

A study of depth and width improvements is warranted. The channel handles 230,000 tons of freight, and 1,100,000 passages through numerous inlets, both to and from the Atlantic Ocean to the New Jersey Intracoastal Waterway.

Local Interest Recommendation

We wish to support the budget request of $50,000 for Fiscal Year 1988 which will be used to initiate a feasibility phase study for this project of major importance to New Jersey's multi-billion dollar resort, recreational and commercial fishing industry.

NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NEW YORK AND NEW JERSEY (CONSTRUCTION)

FY'88 Budget	$ 4,880,000
Local Interest Recommendation	$ 4,880,000

(Increase current congressional project "CAP" from $28.725 million to $55 million to complete necessary work)

Project Description

This project calls for the collection and removal of more than 29 million cubic feet of drift from derelict vessels, and non-repairable piers and waterfront structures. It covers all of the Port of New York and New Jersey including shores and tidal tributaries of Sandy Hook, Raritan Bay, Arthur Kill, Kill Van Kull, Lower New York Bay, Passaic River, Hackensack River, Upper New York Bay, Lower Hudson River, Harlem River, East River, Jamaica Bay and the western port of Long Island Sound. The project encompasses seven New Jersey and seven New York counties. Four hundred and sixty miles of shoreline in New York and 295 miles of shoreline in New Jersey will be affected.

Various types of drift have caused damage to an estimated 17,800 vessels and boats annually. Propellers, shafts and hulls are the most often damaged vessel components. Repair costs and economic losses due to drift exceeded $48 million in 1986. Drift cluttering our shores also creates a menace to swimmers and promotes the spread of marine borer infestation.

Local Interest Recommendation

The recommended Budget Request of $4,880,000 is welcomed and supported.

However, at this time we would like to point out that the completion of the remaining components of this project are indefinite because the total appropriation for this ongoing project is limited to $28,725,000 by Section 116, Water Resources Development Act of 1976.

Congress should consider increasing the present project appropriation cap to $55,000,000 so that the project may be properly completed in its entirety.

PORT JERSEY CHANNEL, NEW JERSEY
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 300,000

Project Description

This project will deepen a 35-foot access channel (non-federal) to a 41-foot channel (federal) providing safe and economical use of this waterway at all stages of tide. The Port Jersey Access Channel presently serves the Global Marine Container Terminal, which in turn serves shipping lines. In 1986, this facility handled 319 vessel arrivals with 192,791 container units (each unit measures 20 feet). This cargo activity alone generates 493 jobs, a payroll of $19.6 million and nearly one million dollars in real estate taxes for the local and regional economy.

Also served by this channel is the U.S. Army Military Ocean Terminal facility and a parcel of land upon which the owner and local cooperating agency, the Port Authority of New York & New Jersey, has announced plans to develop a marine terminal.

Local Interest Recommendation

Since this project has been authorized for construction subject to a favorable report by the Secretary of the Army (and approval of ongoing Corps of Engineer studies by the Chief of Engineers which is estimated for March 1988), the Corps will be ready to undertake its General Design Memorandum for this project in FY'88.

We wish to request an appropriation of $300,000 for this project in Fiscal Year 1988 which will allow the preconstruction engineering and design work to begin, avoiding a potential six-month delay on this urgently needed improvement.

TOWNSEND INLET AND SEVEN MILE BEACH, NEW JERSEY
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 200,000

Project Description

The existing project provides for modification of beach erosion control at Stone Harbor, New Jersey, providing for jetties, a deposition basin, an inlet channel 300 feet wide by 12 feet deep to the New Jersey Intracoastal Waterway, two groins and beach flood control fill at Avalon. Also included in this scope are periodic nourishment of beaches and six existing groins, construction of five additional groins as needed and appurtenant work for jetty fishing.

Local Interest Recommendation

Since no work has been accomplished for this existing project, and local interests have constructed two groins and the south jetty at Townsend Inlet, we wish to recommend for consideration that $200,000 be appropriated to initiate the preconstruction engineering and design phase of the $500,000 total study project cost.

FLOOD CONTROL PROJECTS

ABSECON ISLAND, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 250,000

Project Description

The plan for Absecon Island, which was authorized for Phase I Design Memorandum Stage of Advanced Engineering and Design, would include all the features for the Absecon Inlet frontage of Atlantic City which are partially constructed. Also included are the oceanfront beaches of Absecon Island, and a breakwater constructed just north of the Brigantine Jetty. Periodic nourishment of barrier beaches will also take place with the material obtained from a deposition basin at the breakwater.

Local Interest Recommendation

The purpose of this phase would be to determine whether the existing projects located on Absecon Island should be modified to provide a comprehensive plan that reduces the rate of beach erosion and provides partial protection from storm and flood damage.

The long-term instability and recession of the beaches along Absecon Island due to erosion is a significant problem. In March 1962, a severe northeast storm caused extensive damage to beaches, bulkheads and private property. The storm caused damages of approximately $22,000,000 to Absecon Island communities.

More recently, the storm of March, 1984, also caused damage to Absecon Island. The President's declaration of New Jersey as a Federal Disaster Area included Absecon Island. Hurricane "Gloria", in September 1985, resulted in $6.6 million in damages alone and Absecon Island was once again included in the presidential declaration of a Federal Disaster area.

In review of the above, we wish to recommend that $250,000 be provided in Fiscal Year 1988 to begin preconstruction engineering and design work for this flood control project.

BRIGANTINE ISLAND, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 100,000

Project Description

The proposed plan for Brigantine Island provides for a berm 75 feet wide with an elevation of 10 feet above mean low water. This berm will extend from the northern boundary of the City of Brigantine to 42nd Street South. Included as part of the plan is the improvement of six groins and one groin extension recently constructed by the State of New Jersey. These were considered an integral part of the plan for improvement. In addition to added groin work, a dune will be constructed and the periodic placement of suitable sand as nourishment are all part of the project.

Local Interest Recommendation

Although this project is authorized for Phase I Advanced Engineering and Design only, no work has been accomplished. We therefore wish to recommend an appropriation of $100,000 in Fiscal Year 1988 so that the preconstruction engineering and design phase of this $338,000 total study cost effort may begin.

CAPE MAY POINT, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendations	$ 100,000

Project Description:

This plan was authorized for the Phase I Design Memorandum Stage of Advanced Engineering and Design by the Water Resources Development Act of 1976. The Cape May Point project provides for the placement of beachfill and provision of dune with sand fence and grass. This project also includes connecting dikes on the eastern and western boundaries of the Borough of Cape May; the construction of five new groins, and extension of three others. There are maintenance provisions for proposed and existing groins along with periodic nourishment of the beaches and maintenance of the dune and dikes to provide for flood control.

Local Interest

Since no work has progressed on this plan, we wish to recommend for consideration that a modest $100,000 appropriation be made to initiate the preconstruction engineering & design phase of this $237,000 general investigation study.

DELAWARE BAY SHORELINE, NEW JERSEY AND DELAWARE (PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 200,000

Project Description

The study area is bordered by southern New Jersey to the east and the state of Delaware to the west. The upper limit of the study area is the Chesapeake and Delaware Canal and the Salem River with the lower limit being Cape Henlopen and Cape May Point. This portion of the estuary is approximately 60 miles in length. Located on the New Jersey shoreline are the communities of Elsinboro, Sea Breeze, Gandys Beach, Fortescue, Reeds Beach, and Pierces Point.

Combinations of high tides, river currents, and wind generated waves are the major forces acting to cause erosion of the shoreline and flooding in the study area. Major damages are experienced during hurricanes and "Northeaster" storms generally occurring from September to March.

Local Interest Recommendation

The goals of the study are to provide information on the long-term shoreline changes which will serve as a basis for sound coastal planning decisions.

Since the data is urgently needed in order to deal with the beach erosion/flooding problems in the Delaware Bay area and to implement remedial measures, we wish to request an appropriation of $200,000 in Fiscal Year 1988 for the preconstruction engineering and design phase of this study. This was authorized by the Water Resources Development Act of 1986.

Both the State of New Jersey and the State of Delaware are supportive of the study and have expressed a willingness to consider cost-sharing for the feasibility phase.

ELIZABETH RIVER AND TRIBUTARIES, NEW JERSEY (STUDY)

FY'88 Budget Request	$ 100,000
Local Interest Recommendation	$ 100,000

Project Description

The Elizabeth River Basin is located in Union and Essex Counties, New Jersey, and drains an area of about 23 square miles. The Elizabeth River flows southward for 12 miles through a continuous pattern of urban/suburban development through the Townships of Irvington, Hillside and Union and the Cities of Newark and Elizabeth. It eventually empties into the Arthur Kill one mile southwest of Newark Bay.

The purpose of this study is to review previous reports with a view toward determining the feasibility of providing flood protection measures along the Elizabeth River and its tributaries upstream of the existing project in Elizabeth, New Jersey.

Damage areas have already been identified in the Townships of Hillside and Irvington. The Township of Hillside was subjected to extensive flooding in 1971, 1973, 1974 and 1977 and minor flooding in 1979.

Local Interest Recommendations

We wish to support the Budget Request of $100,000 for Fiscal Year 1988 which will be used to complete the reconnaissance phase. This will include coordination of results with local interests to obtain a cost-sharing agreement for initiating feasibility phase studies. The State of New Jersey has stated its willingness to be the local cooperating agency for this project.

FRANCIS E. WALTER DAM, PENNSYLVANIA (MODIFICATION) (CONSTRUCTION)

FY'88 Budget Request	$ 3,900,000
Local Interest Recommendation	$ 3,900,000

Project Description

The existing Francis E. Walter Dam project is also a single purpose flood control project. The dam rises to a maximum height of 234 feet above the streambed and the present facility does not provide water supply storage.

The proposed modification involves raising the existing dam by 30 feet for the purpose of providing long term storage for water supply and recreational use with no reduction in flood control storage. Water supply storage will amount to 23 billion gallons (70,000 acre-feet) to benefit the entire Delaware River Basin. The area experienced its greatest drought of record during the 1960's. In 1981, 1984 and 1985 the Basin also experienced a serious lack of rainfall that prompted the Delaware River Basin Commission (DRBC) to declare drought emergencies.

Local Interest Recommendations

We wish to support the Fiscal Year 1988 Budget Request of $3,900,000 for construction of this project, which is also part of the Delaware River Basin Commission's Comprehensive Plan. This modification, listed as a Pennsylvania project, will aid four states represented in the Delaware River Basin Compact; Delaware, New Jersey, New York, and Pennsylvania. The increased capacity of this reservoir will contribute to long range water supply storage capability and regional economic stability through drought protection.

HACKENSACK RIVER BASIN, NEW JERSEY AND NEW YORK
(STUDY)

FY'88 Budget Request	$ 300,000
Local Interest Recommendation	$ 700,000

Project Description

This study will determine the need for flood control improvements in the Hackensack River Basin including the Meadowlands. The Hackensack River and its tributaries are located primarily in Bergen and Hudson Counties, New Jersey; and Rockland County, New York. All three counties were declared disaster areas in 1971 and 1975 and Rockland County was declared a disaster area in 1972. It is estimated that over $430,000,000 in damage would result from a 100-year tidal flood. Fiscal Year 1988 funds will be used to revise and complete the reconnaissance phase study of a tidal barrier plan for the Meadowlands.

Local Interest Recommendation

The $300,000 for a study of the Hackensack River Basin flood control feasibility is one item which we support. However, we would like to point out that New Jersey views this particular survey as an ongoing priority, having been initiated prior to the passage of the Water Resources Development Act of 1986. This project should not require cost-sharing for the feasibility study and should be funded with an additional $400,000 in Fiscal Year 1988 to continue the feasibility study.

LIBERTY STATE PARK LEVEE AND SEAWALL, NEW JERSEY
(CONSTRUCTION)

FY'88 Budget Request	$ 6,000,000
Local Interest Recommendation	$ 6,000,000

Project Description

The construction of this levee project will allow the creation of a large "green park" to include a wetlands preserve, an inland water course and boat basin, a marina, an amphitheater, indoor and outdoor recreation facilities, picnic areas, historic areas, community facilities, and other areas for visitors. The stone armored levee will provide a flood control measure for that area of Jersey City, and is also designed for subsequent construction of an attractive tree-lined promenade along the water's edge.

Local Interest Recommendation

We wish to express support for the budget recommendation of $6,000,000 to begin construction of the Liberty State Park levee and sea wall. This historic area is directly opposite the Statue of Liberty and Ellis Island.

LOWER SADDLE RIVER, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ 500,000
Local Interest Recommendation	$ 500,000

Project Description

Major flooding of the Saddle River in recent years has plagued the communities of Garfield, Wallington, South Hackensack, Lodi, Saddle Brook, Rochelle Park and Fair Lawn, New Jersey. The Lower Saddle River study area, located in Bergen County, affects over 2,000 residential, recreational, commercial, and industrial establishments.

In an effort to provide protection against flooding in these communities, the proposed improvements for the Lower Saddle River consists of 5.2 miles of channel modification along the Saddle River, 1.7 miles of channel modification along Sprout Brook, the straightening of a meander near the mouth of the Saddle River and modifications to 22 bridges on both streams. These project improvements would provide protection against a 150-year flood event to the affected area. The recommendations for flood control of Saddle River would eliminate over six million dollars of flood damage to the area annually.

The initiation of a preconstruction engineering and design effort has been authorized by the Water Resources Development Act of 1986 and local interest cost sharing requirements will be provided for land easements, rights-of-way and relocations.

Local Interest Recommendation

We wish to express support for the Fiscal Year 1988 Budget Request of $500,000 which will be used to initiate preconstruction engineering and design which includes topographic data, detailed design estimates and preparation of the plan of study. This preconstruction engineering and design effort, with this initial funding allocation, is scheduled for completion in September 1993.

PASSAIC RIVER BASIN, NEW JERSEY AND NEW YORK
(STUDY)

FY'88 Budget Request	$ 1,152,000
Local Interest Recommendation	$ 3,552,000

Project Description

The purpose of this study is the development of a basin-wide flood control plan, to determine the feasibility of improvements for water supply, navigation, hurricane protection and recreation through the entire Passaic River Basin. As part of this study, a full range of non-structural flood control alternatives, including land acquisition, flood plain mapping and floodproofing of buildings are to be considered. Also, a tunnel diversion plan, aquifer recharge, underground storage and reservoir management system are planned. This basin occupies more than 900 square miles with more than two million people living in its boundaries.

Local Interest Recommendation

While it is particularly gratifying to see funding in the Fiscal Year '88 Budget Request for this project, sufficient progress has been made in the planning studies to warrant moving forward so that the Corps of Engineers can begin preconstruction engineering and design. This is the major project for the entire Passaic River Basin. Therefore, while we indicate support for what is shown in the budget, we are asking that an additional $2 million be provided to allow the Corps of Engineers to begin the engineering and design phase of the mainstream Passaic River Flood Control Project. This will maintain the momentum developed in solving these major flooding problems.

A provision of the Water Resources Development Act of 1986 was a $50 million project to acquire flood-prone residential properties in the Passaic River Basin. This activity, commonly referred to as a "buy-out", will serve to reduce flood damages by buying frequently flooded properties and removing the structures. The State of New Jersey has already undertaken such a project through a $15 million appropriation by the New Jersey Legislature. Based upon our own success within the State of New Jersey and the enormous potential for the larger federal program, we wish to request an appropriation of $400,000 for the Corps of Engineers to plan how the buy-out will take place.

PROMPTON LAKE, PENNSYLVANIA (DELAWARE RIVER BASIN)
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY'88 Budget Request	$ 1,000,000
Local Interest Recommendation	$ 1,000,000

Project Description

Prompton Lake, a single purpose flood control project, is located on the Lackawaxen River in Pennsylvania approximately 30 miles from the confluence of the Lackawaxen and Delaware Rivers in northeast Pennsylvania. The present dam extends to a maximum height of 140 feet above the stream bed. At present, the facility does not provide for water supply storage.

Prompton Reservoir controls the runoff from a drainage area of about 60 square miles and storage capacity for flood control will be unchanged by this project. The modifications to Prompton will provide an active long-term storage of approximately nine billion gallons of new water supply to the Delaware River Basin region. Two recent drought emergencies in the Delaware River Basin give emphasis to the early need for additional supplies of water. This project has also been authorized by the Water Resources Development Act of 1986. It is also included as part of the Comprehensive Plan of the Delaware River Basin Commission.

Local Interest Recommendation

We wish to support the Fiscal Year 1988 Budget Request of $1,000,000 to continue work on the general design memorandum to include hydrology, hydraulics, economics, environmental formulation, and design activities. This preconstruction engineering and design effort is scheduled for completion in June 1990.

This modification, while listed as a Pennsylvania project, will aid the States of Delaware, New Jersey, New York and Pennsylvania, who are represented jointly (along with the U.S. Department of the Interior) in the Delaware River Basin Compact.

RAHWAY RIVER AND VAN WINKLES BROOK, SPRINGFIELD, NEW JERSEY (PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 200,000

Project Description

This flood control project is located in Springfield, New Jersey, and consists of channel excavation, construction of levees, floodwalls, a ponding area, and alternation of bridges. The total project is estimated at $17.5 million, of which $12.5 million is the federal cost. The planning and engineering phase of this project is not presently funded.

Local Interest Recommendation

We wish to request that locally constructed flood control works at Springfield, New Jersey be considered to fully qualify for project qualification purposes. They originally commenced subsequent to Corps of Engineers formulation of the flood control plan authorized by Section 401 of the Water Resources Development Act of 1986. Funds in the amount of $200,000 should be appropriated in Fiscal Year 1988, and remain available until expended, to resume the preconstruction engineering and design work for this project.

RAMAPO AND MAHWAH RIVERS, MAHWAH, NEW JERSEY AND SUFFERN, NEW YORK (PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ 230,000
Local Interest Recommendation	$ 230,000

Project Description

The Ramapo and Mahwah Rivers in the Township of Mahwah, New Jersey, have been adversely affected by chronic flooding. Over 220 structures, primarily residential and several commercial and industrial establishments, have experienced major flood damage in recent years.

In order to control flood damage for the Mahwah/Suffern area, the recommended plan includes channel modification along approximately 7,000 feet of the Ramapo River and approximately 5,000 feet of the Mahwah River, and construction of a new bridge. Improvements would provide protection against a 100 year flood event to the major flood damaged areas. The flood control recommendations would eliminate just under a million dollars of urban flood damage to the area annually.

Preconstruction engineering and design for the Mahwah/Suffern project has been authorized by the Water Resources Development Act of 1986. Previous funding has been used to initiate the preconstruction engineering and design effort, which included project design and cost estimate, analysis of subsurface data, structural stability analysis, determination of real estate requirements, coordination and report preparation.

Local Interest Recommendation

We wish to express support for the Fiscal Year 1988 Budget Request of $230,000 which will be used to complete the preconstruction engineering and design phase of this project, which consists of project plans and specifications, by a scheduled completion date of September 1988.

RAMAPO RIVER AT OAKLAND
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ 250,000
Local Interest Recommendation	$ 250,000

Project Description

The Ramapo River, particularly in the Townships of Oakland, Wayne and Pompton Lakes, New Jersey has experienced chronic flooding, with recent floods occurring in ten out of the last sixteen years. Surrounded by an area saturated with development, 300 residences, along with recreational facilities and several commercial and industrial establishments, have been adversely affected by major flood damage.

The recommended plan of improvement for the study area includes installation of 5-foot spillway crest gates atop Pompton Lakes Dam and 1.3 miles of channel modification along the Ramapo River, both designed to reduce flood elevations. These improvements would provide protection against a 40-year flood event throughout the planning area. These improvements for flood control would eliminate nearly three quarters of a million dollars of flood damage per year.

This project has been authorized for construction by the Water Resources Development Act of 1986 and local interest cost sharing requirements will be provided for land easements, rights-of-way and relocations as are necessary for the project.

Local Interest Recommendation

We wish to express support for the Fiscal Year 1988 Budget Request for $250,000, which will be used to initiate preconstruction engineering and design to include the start-up of technical studies, a plan of study detailing design cost and topographic mapping. This preconstruction engineering and design effort, due to this initial funding allocation, is scheduled for completion in September 1992.

RARITAN RIVER BASIN, GREENBROOK SUB-BASIN (PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ 1,400,000
Local Interest Recommendation	$ 1,800,000

Project Description

Located within the Raritan River Basin in north central New Jersey in Middlesex, Somerset and Union counties, the Green Brook Sub-Basin study area drains approximately 65 square miles of primarily urban, suburban and industrialized areas.

Major flooding losses are not only physical damage to property but loss of public access to commercial and industrial activity; and rail and vehicular traffic. In 1971, Hurricane Doria caused more than $22 million in damage while another major storm in 1973 contributed to six deaths, resident evacuation and over $25 million in damages. Today such a storm would cost over $60 million.

The recommended plan for flood control consists of approximately 15 miles of levees and floodwalls along the Green Brook and its tributaries; six pumping stations; 12 bridge replacements; and approximately three miles of stream re-alignment. The proposed plan for flood control would help eliminate the approximately $11 million in flood damage that occurs in the area annually.

Local Interests

The Water Resources Development Act of 1986 has authorized a flood control plan for both the Upper and Lower Green Brook Sub-Basins of the Raritan River. The Secretary of the Army was also authorized and directed to reevaluate the feasibility of alternate protection plans in the Upper Basin and $500,000 was appropriated, to remain available until expanded, to initiate preconstruction engineering and design for that effort. However, the Upper Basin reevaluation effort shall in no way impede or encumber the progress of an independent schedule for Plan E of the Lower Green Brook Basin.

While we are supportive of the $1.4 million designated in the FY'88 Budget Request for the preconstruction engineering and design of this flood control project, we would like to point out that there is a need for an additional appropriation of $400,000 for this project to be used as follows:

Two hundred thousand dollars would allow the Corps of Engineers to continue to develop a local land use planning model for the Matchaponix Basin. This will help to determine and minimize the impact of future development in the area.
Two hundred thousand dollars is needed for the development of a flood warning system for the entire Raritan River Basin. This is necessary to aid in evacuation during an emergency situations in this very flood prone area.

SANDY HOOK TO BARNEGAT INLET, NEW JERSEY: (Section I)
SEA BRIGHT TO OCEAN TOWNSHIP
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$1,000,000

Project Description

This beach erosion/flood control project provides for Federal participation in the restoration and protection of three sections of the New Jersey shore from Sea Bright to Seaside Park. Sand would be placed to widen the beach to a minimum width of 100 feet at an elevation of 10 feet above mean low water. Also included in the project is the construction of new groins from Sea Bright to Ocean Township, a total of 12 miles.

Erosion from storms has seriously reduced the width of most beaches in the study area, greatly increasing exposure of the shore communities to flood and storm damages.

Local Interest Recommendation

This project is strongly supported by the New Jersey Department of Environmental Protection, and communities of Sea Bright, Monmouth Beach, Long Branch and the State of New Jersey Assembly and Senate. The local communities and State Legislature have spent $6.5 million to date on this project and have programmed an additional $5 million for reconstruction of the seawall, which will be credited to the non-federal share.

The Water Resources Development Act of 1986 authorizes a 50-foot berm at Sea Bright and Monmouth Beach extending to and including a feeder beach in the vicinity of Long Branch, at a total cost of $40 million.

We wish to request that the sum of $1,000,000 be appropriated to this project in Fiscal Year 1988. Preconstruction engineering will do much toward solving this serious flood/erosion problem that threatens the residents and businesses of these coastal communities.

SANDY HOOK TO BARNEGAT INLET, NEW JERSEY: (Section II)
ASBURY PARK TO MANASQUAN
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$2,000,000

Project Description

The project area lies along the Atlantic Ocean shoreline of New Jersey in Monmouth and Ocean Counties, between Sandy Hook to the north and Barnegat Inlet to the south. The Asbury Park to Manasquan section lies solely within Monmouth County and is approximately 9 miles long. This project provides for federal participation in the restoration and protection of three sections of the shore from Sea Bright to Seaside Park through the artificial placement of sand on the beaches. It provides a minimum width of 100 feet at an elevation of 10 feet above mean low water.

Erosion from storms has seriously reduced the width of most beaches in the study area with subsequent exposure of the shore communities to flood and storm damages.

Local Interest Recommendation

The March 1962 storm, and a more recent storm in March 1984, caused millions of dollars in damages. The Convention Hall, Casino and Pavilion suffered heavy losses from wave attack. Business establishments, stores, and commercial establishments and storm drain infrastructure were damaged or destroyed while roads were blocked with sand.

With even less beachfront in place today, local communities are fearful that the next coastal storm would be catastrophic, with increased coastal flooding from storm surges.

We wish to request that the sum of $2,000,000 be appropriated to this project in Fiscal Year 1988 so that the necessary preconstruction engineering and design phase may be allowed to continue.

WATER SUPPLY PROJECTS

SECTION 22 WATER SUPPLY, NEW JERSEY
(PLANNING PROGRAM)

FY'88 Budget Request	$ ---0---
Local Interest Recommendation	$ 300,000

Project Description

This project was established to provide funding for the coordination of studies with other agencies. Funds are to be utilized by the Corps of Engineers to perform engineering evaluations of water supply problems of metropolitan areas within the State of New Jersey and to review water transmission and distribution systems within those areas.

Local Interest Recommendation

This planning program has provided meaningful levels of funding for which New Jersey is most appreciative. However, there are several planning projects for which we wish to request funds in FY'88 through this program. The total funds requested for the projects proposed are $300,000.

Project 1: $100,000

The New Jersey Department of Environmental Protection will evaluate the engineering feasibility of constructing additional water transmission lines from the mainland to the New Jersey barrier islands. This will reduce their vulnerability to a loss of their existing water supply.

Project 2: $75,000

The Great Notch Multiple Exchange Facilities allow four major northeastern New Jersey water supply systems to transfer between systems as much as 75 million gallons of water per day. These systems are in need of evaluation and hydraulic testing to ensure that adequate transfers can be made in the event of a water emergency.

Project 3: $50,000

The New Jersey Department of Environmental Protection will prepare floodway and flood hazard area maps and profiles utilizing the new topographic mapping and hydrologic HEC-2 model for the reach of the Delaware River within the Township of Hamilton and the City of Trenton in Mercer County, and the Town of Belvidere and the Townships of White and Knowlton in Warren County.

Project 4: $75,000

We also request that a feasibility study be funded for flood control projects in one or more of the priority hydrologic planning units (HPU) identified in New Jersey's Statewide Flood Control Master Plan.

New Jersey Maritime Advisory Council Affiliate Organizations

Delaware River Port Authority
International Union of Operating Engineers
New Jersey Alliance for Action
New Jersey Department of Commerce & Economic Development
New Jersey Department of Environmental Protection
Delaware River Bay and Bridge Authority
Pilots Association for the Bay & River Delaware
Port Authority of New York & New Jersey
South Jersey Port Corporation
PENJERDEL Council
The Towboat & Harbor Carriers Association
United Sandy Hook Pilots Association
Joint Executive Committee
Maritime Association of the Port of N.Y. and N.J.
Marine Trades Association of N.J.

STATEMENT OF HENRY G. WILLIAMS, COMMISSIONER, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Mr. Chairman and members of the Subcommittee, I am Henry Williams, Commissioner of the New York State Department of Environmental Conservation.

I want to first thank General Charles Williams for his recent presentation of the Corps' Civil Works Program for the State of New York. However, there are additional needs, authorized by the Water Resources Development Act of 1986 and elsewhere, but not included in the Fiscal Year 1988 appropriations. These needs include the New York State Barge Canal, water supply assistance, dam safety, flood control, shore protection, and research on the Great Lakes and the New York Bight.

The Water Resources Development Act of 1986 authorizes the Secretary of the Army to reimburse New York State for 50 percent of the cost of operation and maintenance of the New York State Barge Canal. In addition, it authorizes reimbursement to the State for up to 50 percent or $5 million, whichever is less, of the cost of rehabilitating the Canal.

New York's canals are the only ones in the nation, despite their use for interstate commerce, that are not fully funded by the federal government, even though during the past decade New York has received only 3 percent of Corps of Engineers outlays while paying more than 9 percent of all federal taxes.

To ensure continuing operation of the Canal, federal assistance is needed as soon as possible. We anticipate that expenditures for the Canal for Federal Fiscal Year 1988 will be approximately $32 million for operation and maintenance, and $10 million for rehabilitation. We request that the Committee consider an appropriation of $16 million for operation and maintenance, and $5 million for rehabilitation for Federal Fiscal Year 1988.

Another concern is the provision of safe and adequate water supplies in New York State. We urge the Committee to appropriate funds to continue the Section 214 and Section 55 programs.

The 214 Program works by providing an opportunity to the Federal, State and local governmental community to reconcile issues together, to one another's mutual satisfaction and benefit. This consensus decision-making results in productive solutions to local problems of statewide significance. Recently, under the Section 214 Program, the Corps of Engineers has started to investigate the critical needs of the State's municipal water supply systems including studies in Albany, Buffalo, Syracuse and New York City. Emergency water supply planning for water shortages in southeastern New York require an immediate investigation of water supply measures to mitigate the potential disastrous effects. These are now being studied in part through the Section 214 authority.

A federal commitment to restore the viability of the nation's aging capital assets is required because of the massive nature of the problem. In New York alone, there is an estimated capital construction need for infrastructure renewal of over 10.0 billion dollars. The Corps could play an important role in future rehabilitation efforts because of their engineering expertise, a role which is currently being defined and developed through the Section 214 Program.

We therefore urge the appropriation of $1,500,000 for the Corps of Engineers to continue its activities in New York State under Section 214 of PL 89-298. We have testified for this program before, and the Subcommittee has responded favorably by putting our request in the Committee Report. This has not been successful in securing the needed Section 214 funds. Therefore, we respectfully submit that this appropriation be requested as a line item in the Appropriations Bill.

In addition, we urge the Committee to appropriate $1,000,000 under the authority of Section 55 of PL 98-251 to provide technical assistance to the State of New York for water resource studies and solutions. This assistance is to be coordinated through the State of New York for the purposes of water supply and dam safety.

Dam safety is another essential component of New York's civil works program. New York's Dam Safety Program was assessed as "Marginally Inadequate" in a recent report by the Federal Emergency Management Agency. We do have an active program of safety inspections for high hazard dams and assign most of our available resources towards enforcement actions for those structures determined to be a threat to downstream residents. We don't have the necessary resources to perform all functions as delineated in the federal model, however.

We urge you to appropriate ~~[illegible]~~ funds for the first year of a five-year program--authorized by Sec. 1201 of PL 99-662. New York's portion of the matching funds would provide for additional staff to inspect dams during construction, establish a department approval process prior to impoundment, and provide periodic hazard verification, thus reducing threats to life and property.

Dam safety is just one component of our program to protect life and property. Title IV of the Water Resources development Act of 1986 authorizes $76.8 million for flood control improvement projects wholly or partly in New York. The Civil Works budget proposes $1.67 million for flood control projects in New York for Fiscal Year 1988. An additional $3.74 million is needed to meet the state's flood control project needs for the year, primarily for survey and study needs.

Section 401 of the Water Resources Development Act of 1986 reinstated the flood control project for the Mamaroneck and Sheldrake Rivers Basin which had been deleted from continuing planning and engineering in 1978 because of the 800 cfs rule (ER 1165-2-21). We request an appropriation of $150,000 to initiate planning, engineering and design of a project for the Sheldrake River in the Town of Mamaroneck.

Hazards are also increasing along our Great Lakes and ocean shorelines. Severe erosion of the beach and dune in the Westhampton Beach area has left a 6000 foot-long reach of the barrier island vulnerable to overwash and a potential breach which would damage the bay and flood back bay properties. Some 250 homes on the barrier island are threatened with destruction and each overwash damages utilities and renders Dune Road impassable to emergency and other vehicles. The Corps of Engineers, New York State and Suffolk County are in agreement that an interim sand fill project of 8.2 million cubic yards is needed for this critical reach. Although Suffolk County withdrew its support in 1974, the County is now firmly committed to the project. This is the highest priority erosion-flooding reduction project in New York State, and we urge a federal appropriation of $15.2 million for construction of the first segment of the project.

Another shore protection project which is urgently needed is that authorized by Sec. 501 of PL 99-662 for the shoreline of Brooklyn, New York, from Rockaway Inlet to Norton Point. We urge the appropriation of $450,000 for continued planning and engineering for this project.1/ The additional beach would dissipate storm energy and help protect shoreline development, while expanding some of the most heavily used beaches in the country.

We also urge you to appropriate the $3 million authorized by Section 706 of PL 99-662 for an inter-agency study of rising Great Lakes levels. Damage mitigation efforts are dependent upon the study findings, while the toll in property damage continues to rise. The study should concentrate on effective ways to relocate or otherwise protect threatened development, while establishing appropriate standards for future shoreline development.

Finally, we urge appropriation of $1 million for the Section 728 authorized automated hydro-environmental monitoring of the New York Bight. This work will support other efforts to manage the Hudson River Estuary area shared by New York and New Jersey, including the Bight, can provide preliminary information is assessing the ICONN-Erie proposal, and is particularly necessary in order to measure the changes resulting from dumping in the Bight.

The Clean Water Act calls for a New York-New Jersey Estuary Management Council, which we expect to be named in 1988. The Bight study is essential to the success of that Council.

In a number of areas, the level of funding proposed in the Civil Works Budget is substantially below the level required for meaningful progress. In a number of other areas where funds are needed, no funding at all is requested in the budget. At the end of our written testimony, we have included a table showing the increased funding levels which are strongly recommended.

Thank you for the opportunity to submit this testimony.

1/ In addition, we urge that federal funding for construction be provided. The Water Resources Development Act of 1986 authorized $11.9 million in federal funding, and $10.6 million in non-federal funding.

CIVIL WO. PROGRAM
ADDITIONAL FUNDS REQUESTED BY N.Y.S. FOR FISCAL YEAR 1988

PROJECT	TYPE	STAGE	FUNDS BUDGETED ($1000's)	FUNDS NEEDED ($1000's)	ADD'L FUNDS REQ. BY NYS ($1000's)
Flood Control					
Passaic River Basin Study	FC	Survey	1,152	1,752	600
Mamaroneck Sheldrake R. Basin (T)Mamaroneck	FC	Survey	0	150	150
South Ellenville	FC	Survey	0	100	100
Mamaroneck Sheldrake & Byram Rvrs.; Byram R.	FC	Survey	0	300	300
Hoosic River Mass, Vt., N.Y.	FC	Survey	0	192	192
Long Beach N.Y.	FC	Study	0	400	400
New York City Flood Control	FC	Study	0	500	500
Upper Hudson River, Warrensburg	FC	Study	0	400	400
Tonawanda Creek	FC	Survey	0	300	300
Southern N.Y. F.C. Projects	FC	O & M	518	1,318	800
			1,670	5,412	3,742
Navigation					
Long Island Intracoastal Waterway	N	O & M	12	727	715
New York Harbor Collection & Removal of Drift	N	Const.	4,880	5,734	854
Great Lakes to Hudson	N	Survey	0	400	400
Fire Island Inlet	N	O & M	0	2,350	2,350
Hudson River, N.Y.	N	Study	0	500	500
Lake Montauk Harbor	N	Study	0	200	200
N.Y. & Adj. Chn. N.Y.& N.J. Ambrose & Anchor Chn.	N	Study	0	500	500
Hempstead Habor NY. PL99-662, Sect. 1115	N	O & M	0	125	125
Plattsburgh Harbor	N	O & M	0	735	735
Saugerties Harbor	N	O & M	0	170	170
Drift Removal (NY Harbor, NY)	N	O & M	3,148	3,366	218
Black Rock Chn. & Tonawanda Harbor	N	O & M	1,712	2,312	600
			9,752	17,119	7,367
Beach Erosion					
Fire Island Inlet to Montauk Pt.	BE	Survey	0	20,000	20,000
Rockaway Inlet to Norton Point, Sect. 501	BE	CP & E	0	450 *	450 *
Westhampton, NY PL99-662, Sect. 502	BE	CG	0	15,200	15,200
			0	35,650	35,650
Total			11,422	58,181	46,759

* In addition, $11.9 million in federal funds authorized in the Water Resources Development Act is needed

Legend:
FC - Flood Control
FDP - Flood Damage Prevention
AE & D - Advanced Engineering & Design
CP & E - Continued Planning & Engineering
N - Navigation
O & M - Operation and Maintenance
BE - Beach Erosion

JOINT STATEMENT OF BRENDAN O'MALLEY, DIRECTOR, PORT DEPARTMENT, PORT AUTHORITY OF NEW YORK AND NEW JERSEY; BORDEN R. PUTNAM, COMMISSIONER OF COMMERCE AND ECONOMIC DEVELOPMENT, NEW JERSEY; AND MICHAEL P. HUERTA, COMMISSIONER OF PORTS, INTERNATIONAL TRADE AND COMMERCE, NEW YORK CITY

Endorsed by:

Bayonne Chamber of Commerce (NJ)
Board of Pilots Commission, State of New Jersey
Brooklyn Chamber of Commerce (NY)
Chamber of Commerce of the Borough of Queens (NY)
City of Newark, Department of Engineering (NJ)
Commerce and Industry Association of New Jersey
Downtown Brooklyn Development Association (NY)
Greater Newark Chamber of Commerce (NJ)
Hudson County Chamber of Commerce and Industry (NJ)
International Longshoreman's Association
Local 333 - United Marine Division
Maritime Association of the Port of New York and New Jersey
Maritime Port Council of Greater New York and Vicinity
New Jersey Alliance for Action
New Jersey Citizens Transportation
New Jersey State Chamber of Commerce
New Jersey Maritime Advisory Council
New York Board of Trade
New York Chamber of Commerce and Industry
New York-New Jersey Port Promotion Association
New York Shipping Association, Inc.
New York State Department of Environmental Conservation - Region II
Save Our Port
Staten Island Chamber of Commerce (NY)
Uniòn County Chamber of Commerce (NJ)
Union County Planning Board (NJ)
United New Jersey Sandy Hook Pilots Benevolent Association
United New York Sandy Hook Pilots Benevolent Association

I am James J. Kirk, Director, Port Department of The Port Authority of New York and New Jersey. Joining me are The Honorable Borden R. Putnam, Commissioner of Commerce and Economic Development, State of New Jersey and The Honorable Michael P. Huerta, Commissioner of Ports, International Trade and Commerce, City of New York. Together we share the responsibility of also representing the 28 civil, trade, labor and governmental interests listed on the cover of this statement in urging that Federal funds be appropriated in Fiscal Year 1988 for essential navigation projects in the Port of New York and New Jersey under the Civil Works program of the US Army Corps of Engineers. We appreciate the opportunity to present our views and recommendations in these matters to the distinguished members of this Subcommittee.

We are deeply aware of the nation's fiscal condition that confronts the Federal Government. However, adequate funding of the Federal share of construction work for navigation channels must continue for ports to provide national economic benefits. Our modest requests for appropriations not only improve service to the end consumer as a key benefit, but provide additional employment, tax revenues, and economic redevelopment of industry.

Given these economic demands and the ports needs to move goods quickly and efficiently, the recommended funding levels, which we will hereinafter present to you, constitute the basic minimum which is needed for the Port of New York and New Jersey. Our mutual interest is directed toward a total of seven projects. We endorse the recommended funding levels for four of the projects. In addition, we urge Congress to provide an additional $2.1 million to increase the funding level for one project and to fund two additional projects for which the Federal budget did not recommend any expenditure. If our recommendations are adopted, this would bring total expenditures for vital harbor improvements in the port to a total of just under $60 million in Fiscal Year 1988. A summary of our recommendations follows:

Project	Budget Recommendations Federal	 Local	Difference
Construction			
Kill Van Kull and Newark Bay Channels	$52,000,000	$52,000,000	None
New York Harbor Collection & Removal of Drift	$ 4,880,000	$4,880,000	None
Study			
Arthur Kill Channel to Howland Hook Marine Term.	$ 323,000	$ 323,000	None
New York Harbor & Adjacent Channels (Port Jersey Access Channel)	None	$ 300,000	$300,000
Arthur Kill Channel Extension to Fresh Kills, Staten Island	$ 200,000	$1,000,000	$800,000
Gowanus Creek Channel	$ 150,000	$ 150,000	None
Miscellaneous			
Emergency Response Services	None	$1,000,000	$1,000,000
Totals	$57,553,000	$59,653,000	$2,100,000

The remainder of our statement will elaborate on the listed projects.

KILL VAN KULL AND NEWARK BAY CHANNELS, NY & NJ

The Kill Van Kull and Newark Bay Channels, NY & NJ is a harbor deepening project that was authorized for construction in the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99-88) and The Water Resources Development Act of 1986 (Public Law 99-662). The Port Authority has provided local cooperation and required non-Federal cost-sharing for this project.

In order for this project to provide quick benefits to navigation, we have agreed to a first increment of work consisting of dredging to a depth of 40 feet the Federal Channels in Kill Van Kull, Newark Bay and the Port Newark - Elizabeth pierhead channels. Thanks to your efforts, we intend to commence channel construction on June 1, 1987. In order to keep the project on schedule and to control costs, we request that Congress continue to do its part in appropriating the needed Federal funds.

We, therefore, strongly urge that the budgeted sum of $52,000,000 contained in the proposed Federal Budget for Fiscal Year 1988 be retained to assure the continuation and timely completion of this project.

NEW YORK HARBOR COLLECTION & REMOVAL OF DRIFT PROJECT, NY & NJ

The New York Harbor Collection and Removal of Drift Project, NY & NJ is a project created to remove sunken vessels and decaying shore structures that eventually become hazards to navigation from the harbor. Thanks to Federal funding, Liberty State Park, Manhattan (East River), Elizabeth, New Jersey, Stapleton, Staten Island, Hoboken, New Jersey and portions of the Weehawken-West New York, New Jersey waterfront have been transformed from useless and decayed waterfronts into impressive and growing areas. During Fiscal Year 1988 local interests plan to initiate cleanup work along the Brooklyn, NY and Bayonne, NJ, waterfronts and to continue work along the western shore of the Hudson River.

We, therefore, request that the sum of $4,880,000 contained in the proposed Federal Budget be retained to assure the continuation of cleanup work by local interests and the Corps of Engineers.

ARTHUR KILL CHANNEL, HOWLAND HOOK MARINE TERMINAL, NY

The Arthur Kill Channel, Howland Hook Marine Terminal Feasibility Report is presently awaiting approval by the Chief of Engineers. The present recommended plan is to deepen the existing Federal channel to 41 feet from the confluence of the Arthur Kill Channel with the Newark Bay and Kill Van Kull Channels to the Howland Hook Marine Terminal. In addition, a 40 foot deepening of the channel from Howland Hook Marine Terminal to the Exxon Bayway and Gulfport oil terminal facilities is also planned.

We urge that the budgeted sum of $323,000 be provided for the Corps of Engineers to proceed in a timely manner with preconstruction engineering and design work.

In order to assure the full potential of our projects in Fiscal Year 1988, we strongly urge that Congress maintain the Federal Budget recommendations. We are prepared to invest some $510 million in the bi-state port to maintain our competitiveness in the marine terminal area. This is an opportunity to maintain the shipping we have, regain the trade we have lost, and attract new business. Thus, we are ready to expand. Some of our projects are only possible if Congress will do its part in appropriating the needed Federal funds.

I will now turn over the remainder of our presentation to Commissioners Putnam and Huerta.

* * * * * * *

Thank you, Mr. Kirk. Mr. Chairman and distinguished members of the Subcommittee, I am Borden R. Putnam, Commissioner of New Jersey's Department of Commerce and Economic Development. In that capacity I also serve as Honorary Chairman of the Department's Maritime Advisory Council. The Council was established to emphasize New Jersey's position as a maritime state and that industry's impact on our State economy. The creation of the Maritime Advisory Council marked a commitment by New Jersey to provide the private sector with an ombudsman to assist in coordinating statewide waterfront development and to promote Federal river and harbor projects of benefit to New Jersey and the region.

Before I discuss other navigation projects, I wish to add my appreciation for the opportunity to convey to you our Region's recommendations and to wholeheartedly endorse the funding requests expressed by Mr. Kirk.

NEW YORK HARBOR AND ADJACENT CHANNELS (PORT JERSEY ACCESS CHANNEL)

Let me now address the justification for our recommended funding increase for the New York Harbor and Adjacent Channels (Port Jersey Access Channel) Project. The Port Jersey channel presently serves the Global Marine Container Terminal, which in turn serves 9 shipping lines, the U.S. Army Military Ocean Terminal and a parcel of land owned by The Port Authority of New York and New Jersey that is being developed as a marine terminal. We expect the New York District Corps of Engineers to soon complete its feasibility study recommending that the present non-Federal 35 foot channel be deepened to a 41 foot Federal channel. Since the project has been authorized for construction subject to a favorable report by the Secretary of the Army, the imminent release of this report and its anticipated approval represent a crucial milestone towards construction realization. We expect that approval of the Port Jersey Channel Feasibility Report could occur in the Spring of 1988. Given that schedule, preconstruction engineering and design work can commence before the end of Fiscal Year 1988. No funds are allotted for this work in the Fiscal Year 1988 Budget. Therefore, we request that $300,000 be made available to the Corps for the initiation of preconstruction engineering and design work for the Port Jersey Access Channel project so as to avoid another year of delay in this important project.

ARTHUR KILL CHANNEL EXTENSION TO FRESH KILLS, STATEN ISLAND, NY & NJ

The Arthur Kill Channel Extension To Fresh Kills, Staten Island, NY & NJ was authorized by the Water Resources Development Act of 1986 (PL 99-662). The budget contains $200,000 for a study to determine the feasibility of deepening and widening the existing Federal navigation project to a depth of 40 feet from the Arthur Kill Channel at Exxon Bayway and Gulfport to Fresh Kills, Staten Island. However, local interests feel that this would be money spent on an unnecessary study phase. It is our intent and, we believe, that of Congress also to move this effort directly into preconstruction engineering and design towards an early construction start. The Arthur Kill extension handles more tonnage than the adjoining Arthur Kill to Howland Hook construction increment which has been determined by the Corps of Engineers to have a benefit to cost ratio greater than 4 to 1, thus indicating that the benefit to cost ratio for this extension is equal to or greater than 4 to 1.

The Arthur Kill extension is vital to the continued health of the harbor and regional economy. The Arthur Kill extension is already heavily industrialized with six deep draft facilities and is expected to remain so. Deepening can be expected not only to benefit existing users but to accommodate new users in the future in this industrial corridor. Therefore, we urge that an appropriation of $1,000,000 or $800,000 more than budgeted be provided to move directly into a combined feasibility/preconstruction engineering and design phase to commence early construction. I will now ask Commmissioner Huerta to elaborate on the balance of our funding recommendations for other Federal navigation projects in the Port.

* * * * * * * *

Thank you, Commissioner Putnam. I am Michael P. Huerta, Commissioner of Ports, International Trade and Commerce, City of New York. I wish to add my appreciation for this opportunity to convey to you the recommendations for Federal navigation projects in the Port of New York and New Jersey. The projects which Mr. Kirk and Commissioner Putnam have discussed are of great importance to our marine terminals. The appropriation of Federal funds to deepen our navigation channels is essential to the success of our local efforts and to the future growth and vitality of our port facilities.

GOWANUS CREEK CHANNEL, NY

The Gowanus Creek Channel, NY project is a Federal waterway that functions as an approach to extensive commercial warehouses, petroleum, and general cargo terminals, handling some 1.5 million tons of cargo annually. The Chief of Engineers feasibility report recommended deepening the existing 30 foot channel to 40 feet, 35 feet and 32 feet below mean low water at various sections of the channel. The existing Branch Channel would also be deepened to 40 feet below mean low water. The Federal budget has provided funds for the Corps of Engineers to undertake preconstruction engineering and design work with a view towards reaffirming the conclusions reached in the feasibility report.

We, therefore, urge that the budgeted sum of $150,000 be retained to avoid further delays in this thirteen-year-old study.

EMERGENCY RESPONSE SERVICES

We request an appropriation of $1 million in the form of a grant under Section 212, Emergency Response Services, of the Water Resources Development Act of 1986 (PL 99-662) to fund the acquisition of new fireboats.

The City of New York fireboats respond to fires throughout the harbor, covering over 700 miles of waterfront. During a typical year our fireboats handle over 2,500 requests for assistance and conduct nearly 4,000 inspections of waterfront structures. They respond to emergencies on both sides of the harbor, in New Jersey as well as in New York. Last year we fought a major petrochemical fire in Bayonne, New Jersey.

New York Harbor handles thousands of containerships, bulk carriers and other commercial vessels and will soon be home to the battleship Iowa and her surface action group. The harbor is also home to cruise ships, barges transporting oil and other chemicals and a growing ferry system. The City's marine division works closely with the Coast Guard and other agencies regarding the shipping of hazardous cargo.

The City of New York is fully cognizant of the need to provide firefighting services throughout the harbor. However, our fleet of fireboats is aging quickly. We have 6 fireboats in the marine division with 2 built prior to 1940. We must not only replace the older vessels, but expand our fleet to meet the demands of an active commercial harbor. It is critical that there exist a modern fleet to fight fires and prevent losses to lives and property.

No funds are included in the Federal Budget for this project. Port interests are anxious to move forward and, therefore, strongly urge that $1,000,000 be provided in Fiscal Year 1988 for this project. This will permit us to study operational requirements of fireboats and begin procurement of state of the art vessels to meet these requirements.

This concludes our statement, Mr. Chairman. I hope that we have conveyed to you and the members of the Subcommittee the sense of a carefully and responsibly targeted program of budget increases aimed at avoiding unproductive time gaps in Corps of Engineers study and construction processes for projects either on the threshold of or well into the construction phase. Though the increases are minor, the purposes they will serve are major. We cannot ask for less nor can these purposes be accomplished with less.

On behalf of Commissioner Putnam and Mr. Kirk, let me close by saying that we hope that the Congress will do its utmost to provide the additional funds we have requested. Thank you for your kind attention and concerns for our recommendations.

STATEMENT OF JAMES R. KELLY, PRESIDENT, DELAWARE RIVER PORT AUTHORITY, ON BEHALF OF THE JOINT EXECUTIVE COMMITTEE FOR THE IMPROVEMENT AND DEVELOPMENT OF THE PHILADELPHIA PORT AREA

IDENTIFYING REMARKS

The Joint Executive Committee for the Improvement and Development of the Philadelphia Port Area is port-affairs spokesman for twenty-four Delaware Valley civic and trade associations whose names appear at the bottom of this letterhead page. Organized in 1888, this Committee has participated in and promoted all major navigation improvements to the Delaware and Schuylkill Rivers and to the Chesapeake and Delaware Canal. The Members pay no dues beyond the nominal amounts needed to cover the Organization's administrative expenses, and its Officers serve without compensation.

Our Delaware River Ports -- Camden, Gloucester, Morrisville, Philadelphia, Chester and Wilmington -- identified collectively as the Ports of Philadelphia, handled 63.4 million tons of international cargo during calendar year 1985 which is the latest year of record. This commerce generated more than a billion dollars into the economy of the tri-state Delaware Valley region. In addition to our international trade, the Ports of Philadelphia handled approximately 30 million tons of domestic cargo. International cargo through the Ports of Philadelphia increased by 10% during the calendar year 1985.

Seven major oil refineries; the largest refinery complex on the east coast, plus one of the nation's largest steel mills are located along the Delaware River. In addition to the support these facilities lend to the economy and to national defense, the Philadelphia Naval Base is strategically located at the confluence of the Delaware and Schuylkill Rivers. In 1986, the Ports of Philadelphia produced $390 million for the Federal Government in Customs Receipts. The above reasons require us to solicit your support for our important and necessary navigation projects.

SUMMARY

The Joint Executive Committee recognizes the need for fiscal restraint. We also have been assured by the Corps of Engineers that the funds contained in the Administration's Budget will provide adequate maintenance of our federal navigation projects. With this in mind we support the President's FY '88 Budget as it relates specifically to the following navigation projects and solicit no increase beyond the following budget figures and the relatively minor budgeted amounts for Navigation Studies which we specifically refer to later in our testimony:

OPERATIONS AND MAINTENANCE

Delaware River, Philadelphia to the Sea	$ 17,417,000
Delaware River, Philadelphia to Trenton	3,617,000
Schuylkill River	118,000
Wilmington Harbor	11,685,000
Chesapeake & Delaware Canal	17,295,000
Total	$ 50,132,000

FULL TESTIMONY

Delaware River - Philadelphia to the Sea and Philadelphia to Trenton

The navigable channel from Trenton to the sea is 120 miles long and it makes possible the economies inherent in waterborne commerce to be brought to the doorsteps of one of the largest urban areas of the United States. Adequate maintenance of the 40-foot channel is of utmost importance to the Ports of Philadelphia. This conduit of commerce provides over 90,000 much needed jobs to the area, over a billion dollars in business revenue and $50 million dollars in local tax revenues. it is only through adequate channel maintenance, which is dependent on adequate funding, that our regional economy will continue to prosper. In view of this we support the appropriation of $21,034,000 for the combined Delaware River - Philadelphia to the Sea and Philadelphia to Trenton projects.

Schuylkill River

In view of the work being completed in the Schuylkill River in FY '87 the amount of $118,000 included in the President's budget is considered adequate to maintain the navigable portions of the Schuylkill River at authorized depths. This will continue to provide access for vessels moving petroleum products to Chevron and Atlantic - two of the areas major refineries as well as to Swann

Oil Terminal; and for the delivery of gypsum rock to a major manufacturing plant located on the River.

Chesapeake and Delaware Canal

The Chesapeake and Delaware Canal continues to be a vital link between the Ports of Baltimore and Philadelphia. This canal which is the busiest man-made sea-level canal in the United States continues to carry an ever increasing tonnage of general cargo. Commerce through this canal now has doubled in the last decade and now approximates 20,000,000 tons per year. Cargo is carried in ocean-going vessels with drafts up to 32 feet. We are assured that the $17,295,000 in the President's Budget will provide for adequate channel operations and maintenance. The Joint Executive Committee supports this budget line item of $17,295,000 to assure safe and efficient use of this important artery.

Wilmington Harbor

The Port of Wilmington is a substantial economic asset to the City of Wilmington, the State of Delaware and the surrounding region. The Port's activities provide an estimated 1,000 jobs for area citizens and account for over $100 million in revenue impacts. The Port of Wilmington has become a principal port in the North Atlantic area for the import of fruit, particularly bananas and orange juice for distribution in both the northeastern United States and Canada.

The budgeted amount of $11,685,000 will enable the Port of Wilmington to continue its dynamic progress; assuring additional economic growth to the region and the nation.

NAVIGATION STUDIES

Delaware River Comprehensive Navigation Study

Of particular import to local interests is the need to continue with the authorized study entitled Delaware River Comprehensive Navigation Study. This study will identify those channel improvements which are necessary to continue to maintain the Ports of Philadelphia as a viable asset. The Ports of Philadelphia support of the worthwhile projects resulting from these studies is evidenced in the fact that early cooperation with cost sharing has taken place in our port in connection with the deepening project in the Delaware River in the vicinity of Camden, New Jersey. We therefore urge your support of the $780,000 contained in the President's Budget in order to continue progress on this study and in recognition of the local initiatives which have taken place under the cost sharing concept.

Schuylkill River, Mouth to Penrose Avenue

The Corps of Engineers has analyzed navigation benefits associated with deepening the channel in the lower Schuylkill River if it is made consistent with the 40-foot Delaware River ship channel. Previous findings support deepening the project from 33 feet to 40 feet from the mouth of the Schuylkill River to the Penrose Avenue Bridge in order to maximize the waterborne capabilities of this river. Continuation of planning and engineering is warranted and we urge that this $150,000 in the President's FY '88 Budget be approved so as to expedite movement toward construction of this economically beneficial activity.

Delaware River in the Vicinity of Camden

The need for $170,000 in the President's Budget to continue the study of the Camden Waterfront is particularly important to eradicate an incongruity which now exists. The Camden Waterfront has modern berths capable of receiving vessels with drafts up to 40 feet. The Delaware River has an improved 40' channel. It is necessary to provide a 40' depth between the Camden ship berths and the Delaware River. The preliminary studies of the Corps of Engineers have indicated this project will have a favorable benefit to cost ratio. In view of the above continuation of this preconstruction engineering and design study is required.

Ports of Philadelphia Witness List, United States Senate Energy and Water Development Subcommittee on Appropriations Hearing, March 31, 1987, Room SD-192, Dirksen Office Building, Washington, D.C.

James R. Kelly, President - Group Spokesman
Delaware River Port Authority

John H. Bates, Vice-Chairman
Joint Executive Committee for the Improvement and Development of the Philadelphia Port Area

Lewis A. Caccese, Consultant
Joint Executive Committee for the Improvement and Development of the Philadelphia Port Area

Robert Banks, Marketing Director
South Jersey Port Corporation

Joseph T. Grossi
New Jersey Department of Commerce and Economic Development
Maritime Advisory Council

William A. Harrison, Executive Director
Ports of Philadelphia Maritime Exchange

William McLaughlin, Communications Director
Philadelphia Port Corporation

Marvin M. Robinson, Commissioner
Pennsylvania Navigation Commission

Samuel M. Schellenger, Chairman
Mariners' Advisory Committee

Robert C. Wonderling, Vice-President
Penjerdel Council

STATEMENT OF ROBERT C. WONDERLING, VICE PRESIDENT, PENJERDEL COUNCIL

Introduction and Summary

FY 88 Funding of Navigation Projects of Interest to the Ports of Philadelphia

The PENJERDEL Council is a tri-state association of commerce, industry, and the professions, with members throughout the Delaware Valley region.

The Council is concerned with the economic well-being of the PENJERDEL region, which includes 11 counties in segments of Pennsylvania, New Jersey, and Delaware. Of primary concern to the PENJERDEL Council is the economic vitality of our ports. We continually advocate on behalf of this regional asset so that our ports will expand and serve the citizens of the United States.

In recent years, the Ports of Philadelphia have prospered. This is a direct result of the continued adequate funding for navigation projects. Ship traffic through the Ports of Philadelphia increased during the first six months of 1986, whereas other major North American ports registered decreases during this period.

The Ports of Philadelphia handled over 60 million tons of international cargo in 1985. Data for the first six months of 1986 show that the Ports of Philadelphia will enjoy an increasingly prosperous year, for example, during the first half of 1986, bulk cargo imports increased 22 percent, general cargo imports increased 7 percent, general cargo exports increased 28 percent, and scrap metal exports increased by 158,000 tons. Clearly, adequate channel depths have a direct impact on customs receipts and our region's contribution to the economic health of the federal government.

Regarding national defense, the Philadelphia Naval Base and Shipyard rely heavily on current channel conditions for the access of the nation's fleet. The USS Independence, USS Dale, and USS Biddle are currently being overhauled at the Philadelphia Naval Shipyard. The USS Kittyhawk is scheduled to move through the Delaware Channel in July, 1987 for a two-year overhaul. The net result of these overhauls has been over $10 billion to the regional economy and a greatly improved defense for our country.

We understand that sufficient funds are contained in the Administration's FY 88 budget for the U.S. Army Corps of Engineers to maintain current channel levels in the Delaware River. These assurances provide increased investment, contribute to the U.S. balance of trade through increased exports, and provide more money for the federal treasury.

The PENJERDEL Council wholeheartedly support the President's FY 88 budget as it relates to navigational projects in the region.

FULL TESTIMONY

Operation and Maintenance

The proposed FY 88 budget provides the U.S. Army Corps of Engineers with the following amounts for the operation and maintenance of the major authorized navigation projects in our area of interest:

Delaware River, Philadelphia to the Sea	$17,417,000
Delaware River, Philadelphia to Trenton	3,617,000
Schuylkill River	118,000
Wilmington Harbor	11,685,000
Chesapeake and Delaware Canal	17,295,000
	$50,132,000

The total included in the President's budget for all O & M projects in the Philadelphia District is $58,996,000.

Delaware River -- Philadelphia to the Sea and Philadelphia to Trenton

The PENJERDEL Council supports the combined allocation of $21,034,000 for the Philadelphia to the Sea and Philadelphia to Trenton projects.

The 120-mile Delaware River Channel has traditionally and adequately maintained a 40-foot draft level. Operation and maintenance funding provides ease of access for waterborne commerce to move through the channel, generating over $1.5 billion for the regional economy. Specifically, the operation and maintenance funding is critical to the removal of rock and gravel along the Marcus Hook and Bellevue ranges.

Schuylkill Harbor

The Administration's budget has allocated $118,000 for channel surveys of the Schuylkill River. Adequate channel depths are essential for servicing the region's petrochemical companies, including two major refineries.

Wilmington Harbor

The Port of Wilmington serves the City of Wilmington, State of Delaware, and the entire PENJERDEL region. the President's FY 88 budget includes $11,685,000 for operation and maintenance of the Harbor. The budget allocates $7,300,000 for the continuing contract for the construction of the Wilmington Harbor South Disposal Area. The disposal area is essential for the operation and maintenance of the entire Delaware River Channel.

Chesapeake and Delaware Canal

The Administration's budget contains $5,200,000 for maintenance dredging of this project. This is sufficient for FY 88 and will ensure that this channel continues to serve waterborne commerce. The net result of adequate channel depths is that approximately 17 million tons of cargo per year move through the channel.

Navigational Studies and Construction Projects

Delaware River in the Vicinity of Camden (New Jersey)

The project was adopted in 1910 and modified in 1930 and 1945. The project will dredge the area in front of the Camden Marine Terminal from the present depth of 30 feet to a depth of 37 feet.

The President's FY 87 budget allocated $2,650,000 for the construction of this project. Local interests have participated in the cost-sharing of this project, with the South Jersey Port Coporation being responsible for 35 percent of the construction cost. Sufficient funds from the FY 87 budget are in place to continue construction of this project.

Delaware River Comprehensive Study

The PENJERDEL Council supports the allocation of $780,000 contained in the FY 88 budget for the continued study of navigation projects in the region. The comprehensive study is ongoing and indentifies those channel improvements necessary to maintain the Ports of Philadelphia as a viable national economic asset.

Schuylkill River, Mouth to Penrose Avenue

The project was recommended by the interim report of the comprehensive study. It would provide a 40-foot deep access channel to a grain terminal and oil refinery. The improvement consists of dredging the channel to about 600 feet downstream of the Penrose Avenue Bridge. The FY 87 budget provided $50,000 in pre-construction engineering and design funds. The FY 88 budget has requested $150,000 to continue the study.

SUBCOMMITTEE RECESS

Senator DeConcini. The committee stands in recess until the call of the chairman.

[Whereupon, at 3:07 p.m. Tuesday, March 31, the subcommittee was recessed to reconvene at 10 a.m. Wednesday, April 1.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1988

WEDNESDAY, APRIL 1, 1987

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:02 a.m. in room SD–116, Dirksen Senate Office Building, Hon. Mark O. Hatfield presiding.

Present: Senators Hatfield, McClure, Garn, and Cochran, also present: Senators Exon, Wilson, and Reid.

NONDEPARTMENTAL WITNESSES

Senator HATFIELD. The subcommittee will please come to order. I would like to welcome each of you here today. We have a very large number of witnesses to be heard, and therefore, in accordance with the notification which was sent to each witness, it will take some self-restraint on the part of everyone to hold the oral testimony to a minimum so that all of you who have requested an opportunity to testify may be heard.

Senator Garn and I also have a vote at 11 o'clock we will have to make on the floor. The detailed statements which each of you has worked out very carefully will be included in the record in full so that will be made a part of the permanent record.

Again, I would like to welcome each one of you, and I would at this time like to invite Senator Garn, my good friend from Utah, to present the distinguished witnesses at this time.

CENTRAL UTAH PROJECT

STATEMENT OF HON. JAKE GARN, U.S. SENATOR FROM UTAH

Senator GARN. Thank you very much, Mr. Chairman. I am pleased to have with us today not only the Central Utah Water Board of Directors, but our Governor, Norm Bangerter, who is here to represent the state and also to speak in behalf of the Central Utah Water Project.

Before I formally introduce him, I would just like to make a few comments and say that we have made, since last year, when this committee met and reviewed the appropriations for the Central Utah Project, a lot of progress.

Just prior to last year's meeting, we held an election which overwhelmingly, in fact, it surprised me considerably, when more than 70 percent of the voters approved a new repayment contract between the government and the Central Utah Water District which would obligate the citizens of Utah to repay over $50 million, rather than the original $135 million.

I think everyone was surprised that we would not only have a rather high turnout for a special election, but despite vocal opposition and negative ads, have 73 percent of the voters approve the higher repayment price. This is a remarkable testimony to the support that this project has within our state.

Also, there have been some troubling longstanding lawsuits that have been an irritation over the years. Those were settled just recently over the last couple of months. Some of the obstacles we have been working with have been totally removed during the last year. In addition, we had an agreement in this subcommittee, in the appropriations bill last year, that incorporated wording that would set forth a program to complete the CUP by the end of fiscal year 1995. I think the chairman remembers that this project, like the highway program we are going to be voting on soon, was supposed to have been completed by 1972.

So to have an agreement that says the project must be finished by the end of fiscal year 1995 and, if it is not, the government will pay the Central Utah Water Conservancy District a financial penalty for the delay is a very positive accomplishment.

In summary, let me say, in all the years that I have been working on central Utah, in fact, the entire 12 years I have been in the Senate, I don't think there has been a year when we have made so much progress as we have made in the last year to remove obstacles and to get a completion date set for the project. I am pleased with this progress and I am very proud to have the Governor with us today.

I have a statement that I have submitted for the record. I ask that it be included along with a statement of my colleague, Senator Hatch.

[The statements follow:]

STATEMENT OF SENATOR GARN

Mr. Chairman, I appreciate this opportunity to offer my comments about the Central Utah Water Project this morning. Before I do, I have the distinct honor of introducing to the committee Governor Norman Bangerter of the Great State of Utah.

Also here this morning are Bob Hilbert, Chairman of the Central Utah Water Conservancy District, Don Christiansen, District Manager, and distinguished members of the Board of directors.

Let me begin by emphasizing that the Central Utah Project has made great strides during the past two years. Under the new direction of Central Utah Water Conservancy District Chairman Hilbert and General Manager Christiansen, the CUP is moving forward: (1) Utah voters overwhelmingly approved a supplemental repayment contract raising the state's obligation to the federal government from $135 million to over $550 million. (2) Longstanding law suits over water supply and environmental concerns have been settled. & (3) Construction of the project's major M & I water storage component, the Jordanelle Dam, is about to begin. CUP has turned the corner.

Last year, the Energy and Water Appropriations bill incorporated an agreement between the Senate and the House which sets forth a program to complete CUP before fiscal year 1996. If the project is not completed by that time, the bill specifies that the government must pay the Central Utah water Conservancy District a financial penalty for the delay.

The Administration's FY 1988 budget request of $134.5 million will allow us to meet that deadline without penalty to the government.

There has been much criticism of the So called windfall which the Central Arizona Project and the Central Utah Project have received in this year's budget. With respect to CUP, I should point out to the committee the fact that even before the Secretary of Interior announced his new approach to funding reclamation projects, CUP was already slated to receive $125 million to meet the project completion deadline. This increase of $9.5 million is hardly a windfall for us.

The FY 1987 bill also included language which was intended to force the Bureau of Reclamation to better manage the construction of CUP through greater management efficiency. I am not pleased with the Bureau's progress on reducing administrative overhead to date and look forward to working with this committee to make certain that the Bureau reduces overhead costs which eat away scarce construction dollars.

Of great concern to me has been the discovery of systematic fund transfers by the Bureau totaling over $67 million dollars away from other Bureau projects. Since 1981, it appears the Bonneville Unit has acted as a funding conduit for other Bureau projects. I don't mind helping my fellow reclamation states Mr. Chairman, I just want to know I'm doing it. This all happened at a time when, despite the Bureau's claim to the contrary, I believe construction capability utilizing those funds did exist in the Bonneville Unit in Utah. Enough said, I trust the committee will work with me to prevent this from happening again.

I appreciate the support the Chairman has always given to the Central Utah Project and look forward to working with him to come up with an equitable solution to this year's budgetary challenges.

STATEMENT OF SENATOR HATCH

Mr. Chairman, it is a pleasure to be here today. Thank you for the opportunity to testify on behalf of the Central Utah Project's fiscal year's 1988 appropriation.

As you know, the project means a great deal to the state of Utah, and we were very pleased with the administration's request for $134.5 million for the Bonneville unit of the Central Utah Project in fiscal year 1988. While the $134.5 million requested by the Bureau of Reclamation for the Bonneville unit represents a sizable increase over the figure appropriated in fiscal year 1987, it is important to remember that this figure represents only a $10 million increase over what the Bureau has contemplated spending on the project in fiscal year 1988 for the past 2 years. The construction schedule which the Bureau established in 1985, with a goal of completing the Bonneville unit by 1995, called for an appropriation in fiscal year 1988 of $125 million.

This $10 million increase effects a major policy shift by the Secretary of Interior and Bureau of Reclamation which will target available funds to those construction projects or features substantially underway, while constraining funds for projects in the early stages of construction.

Under this scenario, great progress can be made toward the completion of the Central Utah Project, a goal I know we all share.

Construction can be completed on stage 2 of upper Stillwater Dam, Doc's diversion dam and Cedar pipeline, road diversion dam and Win Stream Inlet, and the relocation of powerlines at Jordanelle Dam. Work can also continue on the Duchesne area canal system rehabilitation on Jordanelle Dam.

This will continue what I regard as the significant progress which has been made on the project within the last year.

As you know, last year, working with the members of this committee and Congressman George Miller, we successfully added language to the Energy and Water Appropriations bill which accomplished four things:

1. The annual administration costs associated with the project as a proportion of total project appropriations was limited;
2. The percentage of each annual appropriation expended on project construction was maximized, particularly for those project features which are designed to provide water deliveries to the Wasatch Front, such as the Jordanelle Reservoir;
3. The potential for a 10-year interest-free deferral period for which the Water Supply Act of 1958 was invoked in 1981 was eliminated; and
4. The project's prompt completion by the Bureau of Reclamation was encouraged by crediting the Central Utah Water Conservancy District's repayment obligation in the amount of $2 million per year for a maximum of 5 years if the project is not completed by 1995.

These provisions were designed to assist in expediting project construction and completion of this project and should have removed any outstanding concerns that the citizens of Utah are reluctant to pay their fair share for the Central Utah Project.

Mr. Chairman, you and the members of this subcommittee have supported the Central Utah Project year in and year out. I, along with other members of the Utah delegation, are asking for your support. At times I know that support did not come easily, given the litigation and other problems associated with the project. I am pleased to be able to say today that the problems associated with this project in the past have been resolved. It is now moving toward final completion and, ultimately, repayment to the federal government for its investment in Utah's future. Within the last 2 years we have resolved some major issues. A supplemental repayment contract is now in place to cover project repayment. Law suits over water supply and environmental concerns have been settled. Finally, working with you and other members of the committee we have resolved the issues relating to the use of the Water Supply Act of 1958 to defer project costs. In sum, Mr. Chairman, we have turned the corner.

I know that there is intense competition for the limited dollars that are available under the Bureau of Reclamation's budget for construction of badly needed projects all across the West. I sympathize with the proponents of projects in other state's who may have been slighted by the Bureau's budget requests. However, Mr. Chairman, I feel compelled to point out that the sooner the Central Utah Project is complete, the sooner the taxpayers will be receiving repayment for the project. We are close to completing this project now, and with your help in fiscal year 1988 we will be one large step closer still.

I thank you Mr. Chairman, and the other members of the committee for your consideration.

STATEMENT OF HON. NORMAN BANGERTER, GOVERNOR OF UTAH

ACCOMPANIED BY:

- ROBERT HILBERT, CHAIRMAN OF THE BOARD, CENTRAL UTAH CONSERVANCY DISTRICT
- DONALD CHRISTIANSEN, GENERAL MANAGER, CENTRAL UTAH CONSERVANCY DISTRICT

Senator **HATFIELD**. We are very happy to see you, Governor.

Governor **BANGERTER**. I am happy to see you, Senator.

Senator **HATFIELD**. Governor, you may proceed to offer your testimony in either summary or highlight form as you wish. As I say, the full statement will be made a part of the record.

Governor **BANGERTER**. It is a short statement, but I will still try and summarize it, Senator.

It is a pleasure to be with you, and thank you, Senator Garn, for being here with us today. I do appreciate this opportunity. As you know, Utah is generally a relatively dry state. That has been a little different in the last 5 years.

Senator **HATFIELD**. In more ways than one. [Laughter.]

Governor **BANGERTER**. I get abused by my own Senators. I thought I would be treated better by you. [Laughter.]

Where do we go from here? [Laughter.]

But we do have great need, of course, to develop all of the water that is available to us and, of course, the Central Utah Project is a part of the bringing of the Colorado River water into the Great Salt Lake drainage system for use. The Senator has adequately pointed out that our people are strongly supportive of it. I think they agreed to pay the Treasury. The figure that I have is some $639 million, but not to pay that money until the project is completed. Of course, the Jordanelle is big.

Senator **GARN**. Excuse me. We are not in disagreement. Mine was the two parts. What we already know plus the additional adds up to the figure you suggested.

Governor **BANGERTER**. It sounds like a lot of money to a state like Utah. A key element of the project, of course, is that reservoir, and there has been some serious problems on that because we have not had the water rights completely cleared up, but that agreement was reached over the last few months.

We have also received the approval from an independent commission stating that the site of that dam is safe, and we expect to let the first contracts for that project in the next few weeks.

So as you look at your appropriation, we appreciate your consideration; we appreciate the President's request for $134 million for the project. It is our hope that you will fully support that requested amount, which we believe will enable us to complete this project by the year 1995.

We are strongly committed to the completion of the Bonneville unit, as well, within that timeframe, and I also believe that it is in the best interest of the federal government to have this and other ongoing projects completed as quickly as possible. That is a quick summary of the statement, but we appreciate the chance to be here and testify before you this morning.

Senator HATFIELD. Thank you, Governor.

Senator Garn, do you have any questions?

Mr. Hilbert, do you have any comments?

Mr. HILBERT. No, Senator, the government has made the state's district's position known. We feel fortunate that the Governor has taken time from his busy schedule to be here, and we appreciate your taking your time to be here on the panel this morning.

Senator GARN. I would simply make one other comment. There has been some criticism of the $134 million request. However, I think it should be noted—and when we get to markup I will make this more emphatic—but we were scheduled for $125 million in accordance with this agreement that was worked out last year to be finished by the beginning of 1996, in any event.

We are not talking about large windfalls. We are talking about only a $9 million difference in what was going to go ahead to complete this agreement.

It is going to cost the federal government much more if we don't stay on the schedule. In fact, that is the major reason for increases in the Central Utah Project, is simply the delay. This agreement, if we stick by it, will save the federal government more money to then have the repayment contract come into effect than if we let it slip.

So we are not getting any big windfall; we are trying to continue an agreement that was reached that would guarantee completion which would save both the state and the federal government money.

Thank you, Mr. Chairman.

Senator HATFIELD. I will say, Governor, that Senator Garn has been a very strong advocate of this project for quite some time before this committee. You are very fortunate to have him on your side.

Governor BANGERTER. We appreciate that; we and several others. So anything you can do to help us in this regard we appreciate. I think you are aware that last year, it was pointed out that the many millions of dollars of funds that were appropriated directly for Central Utah have been diverted to other projects.

We were happy last year that we received actually more than the appropriation. I think that is the first time that has happened in a number of years. Again, we thank you for letting us come to be with you.

Senator HATFIELD. It is nice to have you here, gentlemen.

Mr. HILBERT. Thank you Mr. Chairman.

[The statement follows:]

Statement of Gov. Norman H. Bangerter of Utah

Mr. Chairman:

I appreciate the opportunity to testify for the State of Utah concerning the FY1988 appropriations for the Central Utah Project and other Department of Interior programs. We are grateful for the support of this Subcommittee throughout the too many years of the CUP's construction. We also appreciate the support of the Administration in their budget request of $134 million for the project, and we look forward to completing the project and repaying, in full, the federal investment.

A significant first step toward repayment occurred last May 16, 1986, when contracts were signed to deliver water from the Bonneville Unit to Salt Lake City. On that day the government received, from the project sponsors, two checks totaling $729,973.00, as a part of our contribution to cost sharing on this project. According to the terms of the repayment contracts overwhelmingly approved several years ago by Utah's voters, this project will begin to repay the Treasury a total of $639,581,000.00, but not until the project is completed.

A key element in this project is Jordanelle Reservoir located on the upper Provo River. Jordanelle Reservoir is needed to provide high quality municipal water to northern Utah County and Salt Lake County. This past year we have made great strides removing obstacles to construction of this reservoir. First, in September of 1986, a panel of independent internationally known experts reviewed the Bureau of Reclamation's own geological studies concerning the Jordanelle site and concluded that a safe dam could be constructed. On

February 26, 1987, the Bureau requested bids for the first construction contract.

Another issue that was resolved just last month involved a dispute concerning water right claims on the Provo River, which had gone on for nearly 25 years. After several months of intense negotiations, the City of Provo and the Central Utah Water Conservancy District (project sponsor) negotiated a settlement which resolved disputes between parties regarding the water supply for the proposed Jordanelle Reservoir.

There are important features of the project in addition to Jordanelle Reservoir that must be funded this year. The present schedule for the Upper Stillwater Dam calls for completion of the placement of the roller compacted concrete. If the construction schedule slips because of the short construction season (June-September) in the high Uinta mountains of Utah, the result would mean another year of unanticipated costs.

Another important part of CUP is the irrigation system of the project. This series of canals will deliver much needed water to the farmers in central Utah who have had a stake in this project for 20 years and are now about to see construction of these irrigation features. We must not let them down.

Mr. Chairman, the Administration's FY1988 budget request for $134 million for the Central Utah Project is essential to meet the water needs of the citizens of Utah. It is our hope that you will fully support this requested amount which will enable the project to be completed by 1995. The state of Utah is strongly committed to the completion of the Bonneville Unit within this time frame and I also believe that it is in the best interest of the federal government to have this and other ongoing projects completed in a timely manner.

Thank you again for the opportunity of appearing before you on these important matters.

COLUMBIA FISH AND WILDLIFE PROGRAMS

STATEMENT OF ROBERT DUNCAN, CHAIRMAN, NORTHWEST POWER PLANNING COUNCIL

Senator HATFIELD. It is my pleasure to invite former Congressman Robert Duncan to come to testify.

Mr. DUNCAN. We are losing all our audience, Senator.

Senator HATFIELD. We are just clearing it out for you, Congressman. I want to say for the record that the acoustics in this room are not very good, so if the witnesses will please speak up, I never had any difficulty hearing Congressman Duncan on any matter, so I don't think I have to remind him.

Mr. DUNCAN. You couldn't understand me, but you could hear me.

Senator HATFIELD. That is another issue. At least we can interpret the record once we get it down on the record, I am very honored to welcome Congressman Duncan, not only one of Oregon's outstanding Congressmen, but one of the great Congressmen of the U.S. Congress and, fortunately, we still have the services of this gentleman in a new role, now, as the chairman of the Northwest Power Planning Council.

Bob, it is such a pleasure to see you across the table again.

Mr. DUNCAN. Thank you, Senator. I appreciate it. I would like to introduce my colleague, Mr. Goller, whom you may remember as the new chief of staff for Senator McClure. He is now a distinguished member of our council from the state of Idaho. On my right is Mr. Rick Applegate, who heads up the fish half of our staff, and beyond that is Mr. Rob Lothrop, who represents the Intertribal Fish Commission. I am going to try to speak for all of them, but Mr. Wapato sent Mr. Lothrop to make sure I stay on the straight and narrow path.

Senator HATFIELD. We welcome each of you here this morning.

Senator MCCLURE. Good to be here.

Mr. DUNCAN. Mr. Chairman, as you know, the council was created as an interstate compact council. We have two primary functions. One is to create a power plan to forecast the need and devise a least-cost way of meeting that need for electrical energy in the region. The other is a fish program in which the Congress mandated us to enhance and improve the fish and wildlife in the region, especially the salmon and the steelhead resources.

Our project and our request here this morning isn't dissimilar from Utah's. We are asking you for a little bit of money. If you give it to us, we are going to save you a lot of money. That is the same as that Utah Project that the Governor was addressing.

We don't need very much; we just need a little bit.

Senator HATFIELD. That is like going to Hong Kong and going broke in Hong Kong to save money.

Mr. DUNCAN. That is right. That is exactly right. But both our fish plan and our energy plan are in place; both have been amended. There is some disagreement about the details on them, but basically, I think it enjoys a substantial consensus of the region; both of them do.

We are here today on behalf of the fish program. Salmon and steelhead actually are back in the river now at substantially increased numbers over recent years. We probably will never be able to restore the historic levels, but we hope to be able to at least double the runs in the next 15 to 20 years.

The council claims some credit for these improved conditions, but the results really come too soon for us to claim a great deal. We think God and nature probably have a lot more to do with the increased runs than our work.

But I think it is also true that the projects sponsored by this committee, the work of the council, and especially the work done on the Canadian Treaty and other harvest regulations, have certainly increased the escapement. Council is concentrating today on passage and production.

The production really deals directly with the work of another subcommittee, but to the extent that you can help us restore $8 million to the National Marine Fisheries to maintain the operating expenses of the Mitcell Act hatcheries, it would be very useful and helpful.

Forty percent of the fish in the river are hatchery fish and it is absolutely essential that we work on the disease problems. We have to maintain the genetic strains and the wild and the natural fish that are in the river.

FUNDING REQUEST

On the question of fish passage, we need $19.6 million added to the Corps of Engineer budget to prevent slippage of several years in the installation of screens and bypasses on the mainstream dams to help the smolts or the baby fish to get to the ocean without being passed through the turbines, where substantial numbers of them are destroyed.

I am authorized to say that this request is supported by BPA, and PNUCC an association of the BPA customers, by the Public Power Council, by the tribes, and by the fishing agencies of the state. We have a consensus of groups that has certainly had difficulty in agreeing in the past.

Tribes and the agencies are for this because it will mean a stop to the decline and an increase in the number of fish. They cannot tolerate, really, further delays in the installation of protective devices that should have been in place on these dams 50 years ago. BPA and PNUCC sup-

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port this because while they, too, want to help the fish, they also want a successful bypass system so we can stop the spilling of water over the dams to move the smolts instead of passing it through the turbines to produce power.

Spill is now required, and it costs from $20 to $30 million a year in lost revenues, depending on water supply and market conditions. The bypass is estimated to cost $162 million over about 8 years. Only the cost of a few years of the spill.

It won't come from the taxpayers ultimately; it is going to be paid by BPA from their revenues collected from the ratepayers. Fish runs, in our judgment, are a part of the cost of hydroelectric power, like the concrete, the steel, and the dams, and then the transmission lines themselves.

We also have requested some funds be added to the Bureau of Reclamation budget for planning for water enhancement in the Yakima River basin. Authorizing legislation on these projects will be reintroduced and we anticipate that they will pass. This money is essential to maintain the planning on the Umatilla basin project and the Yakima project. We would also like the $7 million that is already in the budget, and if you could, to earmark or line item the funds so that they do not get lost in the Corps of Engineers' budget.

In short, we are asking for $19.6 million from this committee as an add-on to the Corps of Engineers; $1 million add-on plus the earmarking or line iteming of the Bureau of Reclamation budget. We hope that you can make it possible for us to restore these magnificent fish to the river which we think should never have been lost in the first place. It is a very modest request, Senator.

Senator HATFIELD. I recall old times; yes, in reference to what you used to ask. [Laughter.]

Congressman, you see no technical risk in combining the design and feasibility of the three projects, do you?

Mr. DUNCAN. No, sir. If we were talking about combining design and construction, I would not be here supporting it. I think that has produced such magnificent examples of government contracting as the B-1 bomber and the Bradley and the Sergeant York. But all we are combining here is a feasibility study and frankly, I think the results of that almost are a foregone conclusion, Senator.

These fish will contribute stupendously, really, to the economy of the area, if we are able to get them back. Whether we get them back or not, we have an obligation to the Indians under the treaties and to the people of the region, I think, to restore the fish runs. I just think the feasibility result is just almost foregone. It is almost a waste of money to do it, in my judgment.

Senator HATFIELD. Do you happen to have a breakdown on how the Corp will allocate the funds by dam?

Mr. DUNCAN. Yes, sir, I do, and I can supply them to your staff. Do you mean totaling the $129 million?

Senator HATFIELD. Yes.

Mr. DUNCAN. Lower Granite, Little Goose, McNary, and Bonneville 1 and 2. There are three dams that have no passaage facilities whatever. There are others that require some improvements to their passage facilities. But it is absolutely essential that we get those three, and then we hope to be able to stop the spill. I am not here to tell you that we are going to stop the spill if these bypasses are not effective. Because I wouldn't expect the tribes or anybody else to be staffed with an ineffective substitute.

But we believe we can make them work, and we believe that that will enable us to stop the spill and permit that water to produce energy and revenue.

Senator HATFIELD. Very good.

Mr. DUNCAN. We thank you for your time.

Senator HATFIELD. Eloquent and excellent, as always.

Gentlemen, do you have a comment?

Mr. DUNCAN. I have offered them to take my place, and they all declined, and I am sorry.

Senator HATFIELD. I don't blame them; I wouldn't, either.

Mr. DUNCAN. I told them that only one of us was going to speak, and if at any time we saw the committee's head nodding in the affirmative we were to shut up.

Senator HATFIELD. Good to see you, Bob.

We also want to include in the record a statement from the state of Idaho and the Public Power Council which support your testimony today.

[The statements follow:]

STATEMENT OF ROBERT DUNCAN, CHAIRMAN, NORTHWEST POWER PLANNING COUNCIL

Mr. Chairman and members of the Subcommittee, my name is Robert Duncan, and I am chairman of the Northwest Power Planning Council. I am presenting testimony on the FY 1988 budgets of five federal agencies. These agencies are the U.S. Army Corps of Engineers, Bureau of Reclamation, Bonneville Power Administration, Federal Energy Regulatory Commission and the National Marine Fisheries Service.

Our interest in these budgets stems from the fact that each of these agencies is an implementer, source of funding for or is directly involved in the Council's Northwest Power Plan and Columbia River Basin Fish and Wildlife Program. Both the Council's power plan and its fish and wildlife program were developed at the mandate of the Northwest Power Act of 1980. Under the Act, Congress provided directives for the Council as a policy and planning body and for the federal agencies as implementing bodies. The ability of these agencies to meet their obligations under the Act is tied directly to their funding levels.

The Council was authorized by Congress and created as an interstate compact by the states of Idaho, Montana, Oregon and Washington. Its purpose is to develop a 20-year regional electric power plan to ensure the Pacific Northwest acquires only resources it needs and that, as it acquires resources, it turns to the lowest cost first. The Council also was required to develop a major fish and wildlife program to rehabilitate Columbia River Basin fish and wildlife resources which have been harmed by hydroelectric development.

Corps of Engineers

The primary focus of our testimony this year is on the need to reduce salmon and steelhead mortality as these fish migrate down the Columbia and Snake rivers. To do this, we need additional funds to speed the installation and improvement of juvenile salmon and steelhead bypass systems at Corps of Engineers dams. Unfortunately, the FY 88 budget for the Corps of Engineers includes only $2 million for continuing studies and construction of essential fish bypass facilities at major dams on the Columbia River--far less than has been available in previous years.

These facilities are among the very highest priorities in the Council's fish and wildlife program. In the past, this subcommittee has provided valuable support for the fish screens and complementary transportation facilities. Dams without screens to deflect fish away from their turbines will kill 11 to 30 percent of the juvenile fish at each project. We believe we can cut these mortality levels in half if we can install adequate bypass screens at the dams. These new and improved facilities are not cheap. But, in the long run, their proper operation could eliminate the need for costly spill at the projects-- water that is diverted away from the turbines and results in lost power revenues.

We need improved bypass facilities at Little Goose, Lower Granite, McNary and Bonneville dams. We need new facilities at Ice Harbor, Lower Monumental and The Dalles dams. I am pleased to report that these needs have been recognized by a coalition of fishery agency, tribal, and utility groups. Bonneville Power Administration, the Pacific Northwest Utility Conference Committee, the Public Power Council, the Columbia River Inter-Tribal Fish Commission, the Columbia Basin Fish and Wildlife Authority, and the Council all support the facilities. These groups have agreed on a schedule for completing the facilities.

The Corps' currently proposed funding level is not sufficient for attaining that schedule. The schedule depends on D.C. Corps approval of combined design and feasibility studies and additional funding. These approvals have been withheld. We estimate it would require a $2 million transfer of funds in FY 87 and an additional $20 million in FY 88 to meet the schedule. Not only would these funds be repaid by Bonneville ratepayers, but the Northwest would save money by reducing spill on a fast schedule. Furthermore, the projects will cost no more if they are done now than if they are done later. We would appreciate your support for their inclusion. We have provided a line-item Council cost estimate by project for your convenience. We urge that the funds be provided as specific line-item appropriations to emphasize the importance of these facilities.

Bureau of Reclamation

The Council has consistently identified the Yakima River Basin as a high priority for fisheries enhancement in the Columbia River Basin. The $7 million for Yakima fish passage facilities in the Bureau of Reclamation budget appears sufficient for continuing studies and construction on or close to the schedule arrived at by the major parties involved. It may be difficult to ensure that appropriated funds are used for these high priority projects. Therefore, the Council believes funding should be on a line-item basis.

Another area of concern is that the budget does not appear to be adequate for continuing the Yakima River Basin Water Enhancement Project studies or for the advance planning on the Umatilla Basin Project--two important efforts to promote sound water use and fisheries enhancement. Relatively small amounts of money would permit continued work on these projects.

Bonneville Power Administration

The Bonneville Power Administration is the chief implementer of the Council's fish and wildlife program and power plan. The Council has reviewed Bonneville's FY 88 budget. We recognize that this budget reflects the financial crisis Bonneville finds itself in. Nearly half of Bonneville's revenues depend on unstable commodities. Declining oil prices have sharply reduced sales to California, which account for about a quarter of Bonneville revenues. At the same time, Bonneville is facing reduced revenues from the Northwest's ailing aluminum smelters. This customer group represents another quarter of Bonneville's revenues. Primarily because of these events, Bonneville has announced prospective rate increases of 9.5 percent for priority firm customers and 8.5 percent for preference customers.

Bonneville conservation spending

Bonneville now expects its total FY 88 budget will be in the neighborhood of $3.2 billion. This includes proposed reductions in the FY 88 budget for energy conservation, reducing it from $108 million to $81 million. The Council believes that, in view of Bonneville's difficulties, this level of budget could sustain conservation funding so long as this spending is focused to protect the region from losing resources that must be purchased in the immediate future to prevent their permanent loss to the region. The most important of these lost-opportunity resources is the energy efficiency of new buildings. If new construction is not accomplished in an energy efficient manner now, it will cost the region approximately twice as much to retrofit these buildings at a later date, and the conservation savings will be considerably less. The Council has just adopted revised model conservation standards for new buildings. Bonneville's assistance in putting these cost-effective standards into practice is critical to the effectiveness of the standards.

Other critical areas of focus include manufactured housing and analysis efforts that will provide better estimates of the cost and quantity of conservation resources in the region. Currently, the Bonneville conservation budget cuts are not allocated to specific conservation activities. We will be meeting with Bonneville to discuss the need to focus the remaining dollars on the high priorities I have just mentioned.

Bonneville fish and wildlife spending

As in the case of the conservation budget, Bonneville's substantially reduced fish and wildlife budget may be adequate, but again, the budget cuts have not been allocated. Therefore, it is not clear if the proposed levels will be sufficient for implementation of the Council's fish and wildlife program action plan. The action plan is an effort to specify high priority activities for an important period in the rehabilitation effort.

Prior to its budget cuts, Bonneville proposed to spend over $50 million for fish and wildlife in FY 88. That budget figure has dropped to just under $36 million and Bonneville has a history of underspending its fish and wildlife budget. In 1986, the agency underspent its fish and wildlife budget by $11 million or 30 percent. While the figures aren't in for 1987, that trend could to be continuing. It may be necessary to anticipate some underspending in order to determine if the proposed cuts are appropriate or excessive.

Bonneville repayment

Once again this year the Administration is proposing to alter Bonneville's repayment schedule for its debt on the region's hydroelectric system. The proposal calls for repayment on a straight-line, 50-year schedule. We estimate the first-year wholesale rate impact of the proposal would be approximately 12 percent. The Pacific Northwest already has an economy which has been slow in recovering from the recession of the late 70s and early 80s. The proposed rate impact could well have an adverse effect on an entire regional economy that is just beginning to get back on its feet.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission FY 88 budget contains $30 million for hydropower regulation. This appears adequate to permit continuing assessment of the impacts on fish and wildlife resulting from a cluster of small hydropower projects and for implementing new hydropower relicensing legislation.

National Marine Fisheries Service

Once again, the National Marine Fisheries Service budget includes an Administration effort to curtail general fund appropriations for operating the Mitchell Act hatcheries. This includes 24 hatcheries that release 100 million juvenile salmon and steelhead into the Columbia system. Together, they account for half the basin's production. They represent a long-standing federal commitment to help alleviate the adverse effects of water diversions, deforestation, hydroelectric dams and pollution. The estimated costs for operating and maintaining these facilities is just over $8 million. In addition, the deep cuts proposed in NMFS anadromous fish research could have a negative effect on Columbia River fish passage and related research. The Council has joined the Northwest delegation in opposing these cuts in the past. There is a widespread belief in the region that the federal government should share in the effort to rehabilitate the nationally important salmon and steelhead resource.

Mr. Chairman, thank you for this opportunity to share our concerns with you. We appreciate this subcommittee's past attention to the needs of the Pacific Northwest. I would be pleased to answer any questions.

STATEMENT OF JIM JONES, ATTORNEY GENERAL, STATE OF IDAHO

It is my understanding that your subcommittee will receive testimony on April 1 from Robert Duncan, chairman of the Northwest Power Planning Council, regarding the need to provide adequate funding in the Corps of Engineers' FY 1988 budget for installation of fish bypass facilities or fish screens at certain Corps projects on the Snake and Columbia Rivers. I am writing to express strong support for this item on behalf of myself and the Idaho Department of Fish and Game.

It is imperative that the installation of fish bypass facilities or fish screens at Corps of Engineers projects on the Snake and Columbia rivers be funded at the level recommended by the Northwest Power Planning Council. These facilities are designed to prevent migrating juvenile salmon and steelhead from being swept into turbine intakes at hydroelectric dams. Unfortunately, the Corps of Engineers' FY 1988 budget would provide only two million dollars for studies and construction of these bypass facilities, a substantial reduction from previous funding levels.

Idaho enjoys a substantial salmon and steelhead resource. Recreational salmon and steelhead fisheries pump many millions of dollars into local economies suffering from ailing logging and mining industries. More importantly, salmon and steelhead are a treasured part of the state's natural heritage.

Unfortunately, the development of the Columbia and Snake rivers' hydroelectric potential has decimated the runs to Idaho and other areas of the upper Columbia Basin. Eight federal dams have been built downriver from Idaho. These dams kill about 80% of the salmon and steelhead smolts hatched in Idaho before they can ever reach the sea. Among the chief contributors to this extraordinary mortality rate are three dams which still have unscreened turbine intakes. Juvenile migrants are swept into operating turbines where large numbers suffer injury and death. Surviving fish may be too stunned to escape the predators that wait below the dams.

The Northwest Power Planning Council has assigned bypass installation at unscreened dams the highest priority in its fish and wildlife program. The program is designed to rehabilitate the Columbia River Basin's fish and wildlife resources that have been harmed by hydroelectric development. Until permanent bypass facilities are in place and operating properly, the program directs the Corps to send a certain amount of water over spillways instead of through turbines. The spill program is expensive in terms of lost power generation. Thus, each year of delay in bypass installation is costly both in terms of fish mortality and foregone power revenue.

These costs have united diverse interests in the Pacific Northwest behind an effort to expedite bypass installation. The region's fish and wildlife agencies and Indian tribes look forward to the gains in fish survival that bypass will bring. The Bonneville Power Administration and the Pacific Northwest Utilities Coordinating Committee support speedy bypass installation in order to generate power with water that now must be spilled. The support of Bonneville Power Administration is particularly important because Bonneville's ratepayers will eventually reimburse the Corps of Engineers for its expenditures on the bypass facilities.

Despite the regional consensus in favor of expedited bypass installation, the Corps of Engineers is reluctant to permit feasibility studies and preliminary design work to proceed concurrently. The Corps' position, though sensible in most situations, represents a false economy in this case. Failure to combine the feasibility and design stages will result in delays in bypass installation of one year at Ice Harbor and Lower Monumental dams and three years at The Dalles Dam. These delays are not justified given that the bypass systems will eventually have to be constructed. Moreover, the small danger that the results of feasibility studies will require new design work is far outweighed by the certain costs of delay.

Therefore, I urge the subcommittee to adopt the Council's recommendations and to appropriate as a line item approximately twenty million dollars for installation of new, and improvement of existing, fish bypass facilities and complementary smolt collection facilities. I further urge that the subcommittee support the transfer of approximately two million dollars in FY 1987 Corps of Engineers funds to give priority to bypass installation.

Your consideration of this request would be greatly appreciated.

STATEMENT OF THE COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

The Columbia River Inter-Tribal Fish Commission is comprised of the Fish and Wildlife Committees of the Columbia River treaty Indian tribes: the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakima Indian Nation. This testimony addresses the need for development of mechanical fish bypass systems at Corps of Engineers dams on the mainstem Snake and Columbia rivers.

Since time immemorial, members of the Columbia River treaty tribes have exercised tribal rights, retained by treaty with the United States, to take fish at their usual and accustomed fishing places in the Columbia River Basin. Many of these fishing places are located above the hydroelectric projects for which the Columbia Basin is renown. However, the Columbia Basin is also renown for the runs salmon and steelhead it once produced. The Columbia was, perhaps, the world's largest producer of salmon and steelhead. Historic run sizes have been estimated at 10-16 million adult fish yearly. Today, the Columbia is still an important producer of anadromous fish, but the numbers are less. During the last five years an average of 700,000 adult salmon and steelhead crossed Bonneville Dam.

The hydroelectric projects of the Columbia and its tributaries are responsible for a staggering loss of these fish. The Commission's technical staff has estimated that, at a minimum, 140 million adult salmon have cumulatively been lost to impacts of the hydroelectric development. The Northwest Power Planning Council estimates that 5-11 million adult salmon and steelhead are lost annually to hydroelectric projects.

The Northwest Power Act

In 1980, the Columbia River treaty tribes supported passage of the Northwest Power Act and its mandates to protect, mitigate, and enhance fish and wildlife to the extent affected by the development and operation of hydroelectric projects within the Columbia River Basin. 16 U.S.C. 839b (h). Traveling screen mechanical bypass systems, to divert fish away from turbine intakes, are one of the key mitigation measures available to offset existing hydroproject impacts. Traveling screen bypass systems have now been installed at five of the eight mainstem Corps projects. However, at three of the eight projects (Lower Monumental, Ice Harbor, and The Dalles dams) traveling screen bypass systems, although proposed, have not yet been installed. The Northwest Power Planning Council's Fish and Wildlife Program directs the Corps to complete installation of bypass systems at these projects by the early 1990's. Major improvements to bypass systems at Lower Granite and Little Goose dams, also sanctioned by the Program, are awaiting appropriations.

Meeting Regionally Adopted Bypass Schedules

The Corps' proposed FY 1988 budget will not allow regional bypass installation deadlines to be achieved. These deadlines, 1990 at Lower Monumental and Ice Harbor, and 1993 at The Dalles, are contained in the Council's Program and enjoy a broad spectrum of regional consensus. The improvements at Lower Granite and Little Goose dams have been deferred from prior years and should proceed as soon as possible. We hope that the Subcommittee will join with the Pacific Northwest in support of bypass system development and installation on schedules contained in the Council's 1987 Fish and Wildlife Program.

STATEMENT OF THE PUBLIC POWER COUNCIL

The Public Power Council (PPC) represents 115 Northwest consumer-owned utilities that purchase all or some of their power from the Bonneville Power Administration (BPA). One of the primary concerns of our member utilities is the cost of power from BPA. Accordingly, a significant portion of PPC's work relates to ensuring that expenditures of BPA, the Corps of Engineers, and the Bureau of Reclamation are cost-effective for our member utilities. Because of our focus on revenue requirements and the resulting wholesale rates, it is a rare occasion where PPC actively seeks to encourage expenditures for a Federal agency. This letter is prompted by such an occasion.

PPC requests that your committee provide additional funds to the North Pacific Division of the Corps of Engineers for their FY-88 budget. PPC is seeking these additional funds to accelerate feasibility studies and design of fish bypass facilities at existing Corps of Engineer hydro projects on the mainstem Columbia and Snake Rivers. By accelerating the bypass projects' design and feasibility phases so they can be completed concurrently, it may be possible to speed up the completion of the projects. The construction of bypass facilities is in the best interest of the ratepayers because their installation will greatly reduce the need to spill water over Corps' dams. The loss in power revenues from the spill is far greater than the cost of installing the bypass facilities. The bypass facilities also offer the possibility of greater fishery benefits than will be available from the existing spill program. The funds necessary to accelerate the feasibility and design phases are an important step in completing the projects.

The Chief's office of the Corps of Engineers has reviewed this project and disagreed with the proposed acceleration. In addition, the Chief's office has suggested that a portion of the funds be appropriated through BPA's budget directly. Regarding the first issue, PPC believes that accelerating the feasibility and design work for the bypass facilities is justified because it will allow reduction in the overall implementation schedule by several years. As far as using BPA borrowing authority, PPC is opposed to this concept. There are long established rules for the appropriation of Corps' funds. We see no valid reason for departure from these procedures now.

Historically, the previous bypass facilities have been funded in the normal manner through Corps' budgets.

PPC urges you to provide the funds requested to the Corps of Engineers and believes that completion of these projects will result in much improved fishery benefits at an overall lower ratepayer investment. Our support of this investment helps to meet the Congressional mandate of the Northwest Power Act to protect mitigate and enhance the anadromous fish runs of the Columbia River.

PPC thanks you for the opportunity to comment.

ELK CREEK LAKE, OREG.

STATEMENT OF MARTIN G. BAUER, VICE PRESIDENT, ROGUE BASIN FLOOD CONTROL AND WATER RESOURCES ASSOCIATION

Senator HATFIELD. Let me invite now the Rogue Basin Flood Control and Water Resources Association and the Oregon ports group, as well.

Will all the Oregon people please come to the table.

Do you want to lead off on the Rogue Basin Flood Control and Water Resources Association and your testimony? Your entire statement will be placed in the record. So,if you could summarize it we would appreciate it.

Mr. BAUER. Thank you, Senator. I appreciate the opportunity to appear before you. My statements are brief, but I would also like to summarize it. First I would like to say in response to Congressman Duncan's remarks, the problems on the dams on the Columbia River system that the Rogue basin is a testimony to the fact that dams and fish can work together. We are pleased with the two projects, Applegate and Lost Creek. Our fish runs have increased significantly.

Today, we appear before you in support of the administration's request for $35 million for fiscal year 1988 for additional work and, hopefully, the final stages of the Elk Creek Dam project on the Rogue basin.

As indicated, the project has been completed. Components of the project have been working very admirably. Lost Creek has generated enough electricity within the last year to energize 19,000 homes. That is the equivalent of 170,000 barrels of oil. In addition, we have had massive increases in the fish runs on the entire Rogue basin system, and we are just real pleased with the fishery enhancement aspects of the project.

Elk Creek Dam at this particular point is 35-percent complete. I have provided some details on the stages of that, and I won't go into those at this time. Probably the most positive news we have on the project to date is the fact that the recreational component of the plan has been downsized to a size that our local administrative agencies, in this particular case, hopefully Jackson County, feels that it will be an economically self-sustained project when completed, and Jackson County has agreed to manage the project when completed in this particular form.

We see this development as a very positive step toward the complete utilization of the recreational capabilities of the Elk Creek project.

I will be happy to respond to any questions that you might have. Thank you for the opportunity to appear.

[The statement follows:]

STATEMENT OF THE ROGUE BASIN FLOOD CONTROL AND WATER RESOURCES ASSOCIATION

I appear today as a representative of the Rogue Basin Flood Control and Water Resources Association and its many member organizations. Our association supports the Reagan administration's budget request for the Elk Creek Dam project, Rogue Basin, Oregon. It appears that the $35 million budgeted by the President will be sufficient to fill the Corps of Engineers' capability for fiscal year 1988. Our association asks that Congress approve these funds.

On October 23, 1987, we will celebrate the 25th anniversary of the congressional authorization of the Rogue basin project. The project has continuously been in the funding cycle since the mid-1960's. Three of the four major project components are now complete and serving admirably. The fishery enhancement aspects of the project have contributed to record runs of salmon and steelhead in the basin; the project last year produced electricity enough for 19,000 homes—the electrical equivalent of 170,000 barrels of oil; the existing Lost Creek and Applegate Dams have provided needed flood control; and recreational usage of the two completed projects is exceeding projections.

Elk Creek Dam, the fourth and final component of this Rogue basin project, is now 35-percent complete. All bypass roads and the diversion conduit are finished. Foundation preparation and grouting are almost complete and construction of the roller-compacted concrete plant is underway. The first roller-compacted concrete will be placed this spring and, at approximately the same time, a reservoir clearing contract will be offered for bid. Completion of the main dam is still anticipated in June 1988, with flood control the following fall.

Perhaps the most positive news regarding the final stages of this Rogue basin project is that an update of the recreational master plan is nearing completion. Through this revision, the proposed recreational development has been down-sized and modified in an attempt to make it economically self-sustaining. Jackson County, which assisted the Corps in this process, has agreed to manage these facilities when completed.

We see this development as a very positive step toward utilizing the full recreational potential of Elk Creek Lake.

Thank you for your usual courteous attention and for your previous support. I will be pleased to answer any questions you may have or provide additional material you may request.

STATUS OF PROJECT CONSTRUCTION

Senator HATFIELD. As far as the construction, not just the schedule, but the construction activity, is it moving along smoothly, or do we have some problems?

Mr. BAUER. Everything is moving along very smoothly. There was an indication of some problems of the ring embankment of the dam, which was not a completely unanticipated thing and is a rather normal occurrence in a project of this kind.

Those problems have been solved. The construction work and the additional excavation have been completed.

Senator HATFIELD. How much will it cost to correct that little experience?

Mr. BAUER. I don't have a number on that.

Senator HATFIELD. We will get that from the Corps of Engineers. But I believe early estimates provided indicate the cost to be in the $3 to $4 million range.

Mr. BAUER. Thank you.

Senator HATFIELD. Now, Mr. Murray, do you want to introduce your colleagues this morning and proceed on the Oregon coastal ports testimony?

OREGON COASTAL PORTS

STATEMENT OF THOMAS MURRAY, CONSULTANT TO OREGON PORTS OF SIUSLAW, NEHALEM, UMPQUA, AND GOLD BEACH

ACCOMPANIED BY:
WILBUR TERNYIK, VICE PRESIDENT, PORT OF SIUSLAW
ELLIE DUMDI, COMMISSIONER, LANE COUNTY, OREG.
F.E. KNIGHT, PRESIDENT, PORT OF NEHALEM
STANLEY A. JUD, SECRETARY, PORT OF NEHALEM

PREPARED STATEMENTS

Mr. MURRAY. Yes, Mr. Chairman. We have four prepared statements for the Ports of Gold Beach, Umpqua, Siuslaw, and Nehalem. We ask that they be included in the record, please.

[The statements follow:]

STATEMENT OF F.E. KNIGHT, PRESIDENT, PORT OF NEHALEM, OREG.

My name is F. E. Knight. I am President of the Port of Nehalem, Tillamook County, Oregon. Port Secretary, Stanley Jud and I are here to support the Corps of Engineers' fiscal 1988 budget request for $10,000,000 for funding Section 107 - Small Navigation Projects Not Requiring Specific Legislation.

We have been here supporting these Corps of Engineers' annual requests for Section 107 funds since the Portland District started its study for a relatively small channel deepening project on the Nehalem River to fully utilize the more than 12 million dollars Congress appropriated to reconstruct the jetties at the river entrance.

The Portland District's "107" report has been inactive since late 1983. In the meantime there has been long and costly litigation that has led to favorable decisions in the Oregon Court of Appeals and the Oregon Supreme Court which should make possible the issuance of dredge and fill permits for a proposed major marina development. This development is one of the principal reasons for, and justification of, the channel deepening proposed on the river. It is for this reason our statement again outlines our support for the Corps "107" funding program. We would like to have the Congress urge the Corps to expedite these important economic development projects on the Nehalem River.

The real issue holding up this "107" study was the special-interest environmental groups' opposition to the proposed marina that would provide much of the economic justification for our proposed 8-foot channel deepening project. Except for one shoal area in the bend of the river, there is an 8-foot, or more, natural river channel year around.

The original dredge and fill permits requested of the Oregon Division of State Lands and the Corps' Portland District were denied by both agencies. The marina developer spent about $80,000 in obtaining qualified professionals who provided the data necessary for use in the favorable decisions of two Oregon courts.

Following the favorable Oregon Supreme Court decision, the marina developer applied for the second time to both the State and Portland District for a renewal of the dredge and fill permit. The Corps of Engineers returned the application nine days later.

The application for renewal of the Federal dredge and fill permit was made to the Portland District on February 3, 1987, and returned to the applicant by letter of February 12, 1987, stating that the Portland District could not accept the application as it felt no substantial revision had been made. A copy of the February 12, 1987, letter is attached. Also attached is a copy of the Portland District's letter of May 1, 1985, denying the original permit application.

The major marina development and proposed channel deepening project on the Nehalem River constitute the most important economic development and job-producing' project on the horizon for North Tillamook County.

After the long and costly delays which should be ended as a result of Court actions, these developments should warrant top level attention to reduce further unnecessary expenditures of public and private funds.

We thank you for your generous assistance in the past, and for allowing us to come before you on issues considered comparatively minor to the national concerns before this Committee, but they are of critical importance to the economic and social wellbeing of the constituency we serve.

Thank you.

Letter From G.A. Newgard, Chief, Regulatory Branch, Portland District, Corps of Engineers

February 12, 1987

Operations Division (NPPOP-R-1)

Subject: 071-OYA-2-005185 (Nehalem River - Marina)

Vern Scovell
P. O. Box 151
Nehalem, Oregon 97131

Dear Mr. Scovell:

We have received your application for a Department of the Army permit to construct a marina and related structures on Nehalem River, Mile 5.5 in Tillamook County at Wheeler, Oregon. However, we cannot accept your application.

In our letter of May 1, 1985 (Enclosure 1), the Corps of Engineers denied your permit application (number 071-OYA-2-005185) dated October 24, 1983, to construct a marina and related structures in the same location. At that time, we provided our Statement of Findings (Enclosure 2) outlining our basis for denial.

In addition, our letter of June 18, 1985 (Enclosure 3) stated that the Corps would accept revised application for the subject project if substantially revised to overcome previous objections. After a comparative review of your original application dated October 24, 1983 and your current application dated February 3, 1987, we find no substantial revision has been made. Consequently, we are returning your application and drawings to you (Enclosure 4).

If you have any questions, please contact Richard Johnson at the above address or telephone (503) 221-6995.

Sincerely,

G. A. Newgard
Chief, Regulatory Branch

CF: ODSL w/Enclosures
Diane Spies & Associates w/Enclosures

LETTER FROM COL. R.L. FRIEDENWALD, DISTRICT ENGINEER, CORPS OF ENGINEERS

MAY 01 1985

Operations Division (NPPOP-R-1)

Subject: 071-OYA-2-005185 (Nehalem River - Marina)

Vern Scovell
P.O. Box 151
Nehalem, Oregon 97131

Dear Mr. Scovell:

In accordance with 33 CFR 325.8(b), the subject application for permit has been denied. The reasons for denial are described in the attached copy of the Statement of Findings. Also, we have enclosed your application and drawings.

If you have any questions, contact Jerome Simpson at the above address or telephone (503) 221-6995.

Sincerely,

R. L. Friedenwald
Colonel, Corps of Engineers
District Engineer

Enclosure

CF: w/o Incl.
EPA
USF&WS
NMFS
ODSL
DLCD

STATEMENT OF WILBUR E. TERNYIK, VICE PRESIDENT, PORT OF SIUSLAW, OREG.

Mr. Chairman:

My name is Wilbur Ternyik. I am Vice-President of the Port of Siuslaw, Oregon. I am accompanied here today by Mrs. Ellie Dumdi, a Lane County Commissioner who represents the area of Lane County in which our port district is located.

We are here to support the Corps of Engineers' Fiscal 1988 budget request for $758,000 for Operation and Maintenance of the Siuslaw River Navigation Project, and the Corps' request for $10,000,000 for funding under Section 107 - Small Navigation Projects Not Requiring Specific Legislation.

The overall plan for river and harbor development on the Siuslaw River included extension of the two jetties at the river mouth, and a protected boat basin just inside the mouth.

Your Committee generously recommended the funding necessary for completion of the jetty extensions. The Corps of Engineers' draft study of the boat basin showed the project to be feasible from an economic standpoint; however, the study was postponed indefinitely pending resolution of several environmental issues.

The Port has two of Oregon's most respected biologists engaged to produce factual data which we think could resolve the environmental issues. Our statement outlines the problems and the approach we are taking to resolve them.

The two unresolved environmental issues that have held up the Corps "107" boat basin study are:

1. Lane County must receive an "Exception Use Permit" from Oregon's Land Conservation and Development Commission consistent with the Federal Coastal Zone Management guidelines for the dredging and filling of the intertidal area to permit development of the boat basin, and

2. The Port of Siuslaw must provide mitigation to compensate for the loss of ~~wet~~tidelands in the intertidal area to make the boat basin development acceptable.

The Port of Siuslaw is in the process of completing two studies to provide the factual data necessary for resolving the two environmental concerns that have delayed the project.

The first study, due for completion in July, 1987, is, "Birds and Mamals at the Proposed Boat Basin Site and Possible Mitigation Sites at the Siuslaw Estuary." A benthic study, already outlined, is to follow completion of the above study. We feel that both of these studies by qualified professionals will provide the quantified data for decisions leading to completion of the Corps' "107" study.

The development of the overall plan for the Siuslaw River will provide one of the most assured long-term economic benefits to the Central Oregon Coast and Lane County.

We again extend our sincere appreciation for this Committee's generosity in recommending the Federal funding that has brought our Port District, Lane County, and its communities, one of the most important public works projects of our time.

Thank you.

STATEMENT OF JOHN WOLF, PRESIDENT, PORT OF UMPQUA, OREG.

Mr. Chairman, my name is John Wolf. I am president of the Port of Umpqua, Douglas County, Oreg.

The Port of Umpqua supports the $800,000 of operation and maintenance authorized (O&M) funding requested in the Corps of Engineers' budget for fiscal year 1988. These funds are essentially for dredging.

While the Corps of Engineers has not expressed a capability for use of additional O&M funds this year, there is great need for additional O&M funding for this project for continuing erosion control revetment works.

There is an ongoing and intensifying shoreline erosion problem inside the mouth of the three-jettied entrance of the Umpqua River that was first recognized and repaired in 1950–51. There have been three O&M repair projects in this area since 1980, the latest completed in 1986. There is another O&M project in the immediate area tentatively scheduled for a construction start in October–November 1987.

The continuing erosion that is directly attributable to the authorized federal navigation channel project has already caused substantial expenditures by other units of government or special districts for emergency protective repairs or replacement. This continued erosion seriously threatens a major publically developed commercial/recreational boat basin complex on the river.

There is a compelling need for sufficient O&M funding to properly complete the shoreline stabilization works necessary to protect the large-scale public and private investments predicated upon the federal navigation channel system.

The continued assistance of your committee in behalf of the Umpqua River navigation project is greatly appreciated. Thank you.

STATEMENT OF KENNETH KENSLEY, PRESIDENT, PORT OF GOLD BEACH, OREG.

Mr. Chairman, my name is Kenneth Hensley. I am president of the Port of Gold Beach, Oreg.

Proper and adequate annual maintenance dredging of the authorized Rogue River entrance and basin channel is the most critical issue facing the Port of Gold Beach today.

The Portland District of the Corps of Engineers failed to conduct any hopper dredging of the entrance channel this past year, even though Congress appropriated funds ($429,000) in fiscal year 1987 for the operation and maintenance of this project whichincluded hopper dredging.

Adequate Rogue River navigation channels are necessary for commercial fishing boats to use port facilities safely and economically and for the economic viability of a cannery in the harbor, which employed 162 persons in its 9 months of operation in 1986, making it the second largest industrial employer in the community served by this navigation channel project.

The Corps of Engineers did have its channel flushing vessel *Sandwick* operating in the entrance channel this past year, agitating materials in the channel to be moved by ocean/river currents. This type removal of shoaled areas for channel deepening and stabilization has not proven sufficient to maintain channel depth for timely use of many commercial fishing boats that could deliver to fish receiving/canning facilities in the harbor at Gold Beach.

The Corps' Portland District opened bids on March 26, 1987, for maintenance dredging to restore dimension of the inner harbor channel.

We urge this committee's continued assistance in providing funding to keep Rogue River navigation viable and to urge the Corps of Engineers to utilize appropriated funds for the dredging in its proposed budget request to Congress.

We sincerely appreciate the cooperation and assistance of this committee.

Thank you.

INTRODUCTION OF SUPPORTING WITNESSES

Mr. MURRAY. I would introduce the elected representatives here. To my immediate right, Wilbur Ternyik from Port of Suislaw; to his right, Mrs. Ellie Dumdi, commissioner of Lane County; to my right, Frank Knight, president of the Port of Nehalem.

Senator HATFIELD. What is his first name, Frank? [Laughter.]

Mr. KNIGHT. Incognito.

Mr. MURRAY. To his left is Stanley A. Jud, the secretary of the Port of Nehalem, and we would ask, with your permission, that Mr. Knight lead off, please.

Senator HATFIELD. We welcome you, Franklin. [Laughter.]

NEHALEM RIVER SECTION 107 PROJECT, OREGON

Mr. KNIGHT. Thank you, Senator. My name is F.E. Knight, and I am president of the Port of Nehalem, Oreg. Stan Jud, our secretary, is here with me, and we are here in support of the Corps of Engineers fiscal 1988 budget request for $10 million for funding section 107, small navigation projects not requiring specific legislation.

We have been here supporting these Corps of Engineers' annual request for section 107 funds since the Portland District started its study for a relatively small channel-deepening project on the Nehalem River to fully utilize the more than $12 million Congress appropriated to recorrect the twin jetties at the river's entrance.

I might say, Senator, that since the jetties have been recorrected, we have had no fatalities crossing the river, and our crossings have increased manyfold.

Senator HATFIELD. Before that we had 20?

Mr. KNIGHT. Oh, yes; 27.

Senator HATFIELD. Twenty-seven.

Mr. KNIGHT. I thought that might be of interest to you.

Senator HATFIELD. It is.

Mr. KNIGHT. And we appreciate that.

The Portland District section 107 report has been inactive since late 1986. In the meantime, there have been long and costly litigation that has led to favorable decisions in both the Oregon Court of Appeals and the Oregon Supreme Court which would make possible the issue of dredge-and-fill permits for proposed marine development.

This development is one of the major reasons for, and justification of, the channel-deepening proposed to the river. It is for this reason our statement again outlines our support for the Corp's 107 funding program. We would like to have the Congress urge the Corps to expedite these important economic development projects on the Nehalem River.

You have the balance of our testimony there. I am not going to go over that, but in closing, I would like to say that we thank you for your generous assistance that you have provided us in the past and for allowing us to appear before you at this time.

Although the issues considered are comparatively minor in the national scene, this is very important and of critical importance to us for the economic and social well-being of the constituency we serve. We appreciate anything you can do and thank you.

Senator HATFIELD. Thank you.

Mr. Ternyik?

SIUSLAW RIVER NAVIGATION PROJECT, OREGON

Mr. TERNYIK. Again, we thank you for being able to appear here. My name is Wilbur Ternyik. I am vice president of the Port of Siuslaw, Oreg. I am accompanied here by Mrs. Ellie Dumdi, a Lane County commissioner who represents the county in which our port district is located. We are here to support the Corps of Engineers fiscal 1988 budget request for $758,000 for operations and maintenance of the Siuslaw River navigation project and the Corp's request for $10 million for planning under the section 107 small navigation projects not requiring specific legislation.

The overall plan for the river and harbor development on the Siuslaw River will build the extension of two jetties at the river boat and a protected boat basin just inside the mouth. Your committee generously recommended that funding necessary for the completion of the jetty extensions.

The Corps of Engineers' draft study of the boat basin show the boat project to be feasible from an economic standpoint. However, the study was postponed indefinitely pending the resolution of several environmental issues. The port has two of the most respected biologists engaged to produce factual data which we think would resolve the environmental issue. Our statement outlines the approaches of the problems we are attempting to resolve.

The two experts we hired are Jeff Goner from Oregon State University and R.D. Vare is doing the bird study on this. We actually haven't identified environmental problems. It is going through the land use planning process required by CZM to overcome these problems, if they are identified.

We certainly thank you for your help in the past.

Senator HATFIELD. Mr. Ternyik, do you feel that the O&M request for the Siuslaw River for fiscal year 1988 is adequate?

Mr. TERNYIK. We do, at this time.

Senator HATFIELD. You think it is?

Mr. TERNYIK. Yes. We still have not at this time had a fresh river since the jetty extension that would give us the indication of what would be an average flushing action on the river mouth, so we really don't know what is going to happen at this time. Based on past experience—and by the way, we do have a year-round fishing fleet.

Senator HATFIELD. Those jetties are working?

Mr. TERNYIK. The jetties are working, and we have experienced the same thing that Mr. Knight was talking about, a very dramatic decrease in the number of drownings on our part.

Senator HATFIELD. You mentioned the Supreme Court ruling relating to landfill and development in the marina. Do I understand correctly that the Oregon State Land Agency has disapproved a permit for the dredge fills that would be required?

Mr. MURRAY. That is right.

Mr. KNIGHT. Basically, the disapproval is based on the same issues that the Supreme Court ruled in our favor.

Senator HATFIELD. You know, it makes it very difficult to work with a federal agency on this kind of a problem when we can't get the approval of the state agency that has some jurisdiction, as well.

Mr. KNIGHT. Maybe you would have more influence on them than we have. It is a problem, and we realize the situation that you are in, that you want the approval of the state agencies so that then the federal agency can, and it is of great concern to us, but we are hoping to overcome that obstacle.

Senator HATFIELD. Is this disapproval following the Supreme Court ruling?

Mr. KNIGHT. Yes; it is.

Senator HATFIELD. So they have not updated in their position vis-a-vis the Supreme Court ruling?

Mr. KNIGHT. No. They stated that since there had been no substantial change in the denial of the first time, however, the Supreme Court ruled on those same changes on the same deal. So we didn't have any reason to make a change.

The division of state lands has not officially denied it after the Supreme Court as yet.

Senator HATFIELD. What is the configuration of that agency? Is it what we used to know it as the old State Land Board.

Mr. KNIGHT. Yes, sir.

Senator HATFIELD. Is it still made up of the three constitutional officers of the state?

Mr. KNIGHT. Right.

Senator HATFIELD. Have you visited with those three constitutional officers about this in light of the Supreme Court ruling?

Mr. KNIGHT. No.

Senator HATFIELD. I would urge you to do so. The Governor, as you know, has made a very strong statement regarding the economic development needs of the state, and he is addressing it region by region, the plans being developed out of the regions of the state rather than being developed at the state level and handed down.

I would venture a thought that the Governor might be helpful on this. It certainly would be worth your effort, I think, to try to get them to see this is part of the economic development potential for that particular area of the state.

Mr. KNIGHT. I think your point is well taken, and he has been on the south coast and has been showing very strong support to coastal developments in that area. We hope he can work his way up north.

Senator HATFIELD. I just couldn't be very optimistic about getting the Corps involved in moving that to 8 feet from the 3 if we couldn't get some kind of place to handle the spoil.

Mr. KNIGHT. We have that; it is all approved. That has gone through all of the comprehensive plan, the whole thing, and we have made adjustments with the state on limiting where it can be put. It is going to be over on the state park and we have agreed on how much it is going to be.

Senator HATFIELD. But you do not have the fill permits?

Mr. KNIGHT. We haven't got the permits but we have got the disposal sites all approved.

Senator HATFIELD. But you still have to get the permit.

Mr. KNIGHT. That is right; that is correct.

Mr. JUD. Actually, Senator, it is not a disapproval. The administrative arm, the state land board is an administrator of state lands. That administrator has simply refused to issue the permit. We are in agreement. We think the Governor is the next man to talk to.

Senator HATFIELD. Well, you have to get the Governor behind this somehow.

Mr. Ternyik, do you have any further comments you wish to make?

Mr. TERNYIK. No, sir.

Senator HATFIELD. Commissioner Dumdi, do you care to make any comments.

Ms. DUMDI. I have no comments to make, Senator.

Senator HATFIELD. We are happy to have you here.

Mr. TERNYIK. Thank you for the courtesy you always extend.

COLUMBIA BASIN IRRIGATION PROJECT

STATEMENT OF CHAN BAILEY, EXECUTIVE SECRETARY, COLUMBIA BASIN DEVELOPMENT LEAGUE

ACCOMPANIED BY TERRILL DAVIS, DIRECTOR, SOUTH COLUMBIA BASIN IRRIGATION DISTRICT

Senator HATFIELD. Mr. Chan Bailey of the Columbia Basin Development League, and I believe you have some colleagues with you. We invite you now and welcome you.

Mr. BAILEY. I am Chan Bailey but I am going to let Terrill Davis from the south basin area give our statement.

Senator HATFIELD. Would you care to introduce your other colleagues first?

Mr. BAILEY. We have a number of people here today, all irrigation district directors. We have Rex Lyle, Earl Terwilleger, Ed Spaulding, Rogers Neff, Bernie Erickson, Richard Stevens, and Merle Gibbons.

Senator HATFIELD. We are happy to have all of you here. Your full statement will be placed in the record, and you may proceed to offer your verbal statement.

Mr. Davis. Senator, my name is Terrill Davis. I am a member of the South Columbia Basin Irrigation District board of directors and I am speaking today for my board, the Quincy Board, and the East Columbia Board of the Columbia basin project of Washington.

I would like to begin by pointing out that the budget for the Columbia basin project in 1987 was $7.1 million. That has been cut to $2.87 million. As a result of these drastic cuts, two drains which had been planned to be installed in the Columbia basin project last year were canceled. This is the first time drains have been canceled. I would like to review briefly the history of those drains.

In 1963, it became apparent in the Columbia basin that drainage was going to be a problem, and our initial repayment was $85 an acre. Because of the seriousness of the drainage, we, with meetings with the Bureau, requested that something be done so that the drainage could be taken care of and the farmers, after many meetings and arguments and, in a couple of cases, even fights, we agreed to bring to the irrigators a proposal to increase our obligation to the U.S. Government from $85 to $131.60, which was a 55-percent increase in our obligation.

That was subsequently voted upon and approved. In the intervening years, the Bureau has done an excellent job in providing drainage until this year, this past year. They didn't do the two drains that has been scheduled. It is absolutely disastrous for the people that have been affected by drainage, I mean drainage that needs to be done.

In these times, it is hard to make a profit anyways, and if you lose some of your productive land, it is impossible to continue. So we are very concerned, and we request that we be given an additional $900,000 for drainage in this fiscal 1988 year. The drainage is nearing an end. This isn't going to go on forever. We estimate that there is probably 30,000 acres yet to be drained of a project out of 550,000 acres. So the drainage will be coming to an end.

PHASE 2 DEVELOPMENT

The other thing we are requesting is that the United States provide $400,000 to help complete the environmental impact statement on the second half of the project.

This is important to secure another 10-year period for the second half water right. So this, too, is important to us. We need this $400,000 very much. The state of Washington has put up approximately $200,000, I think it is $207,000, and we are willing to put up another $50,000 for the completion of this environmental impact statement.

So the state is putting up a good amount of money, and if we can get another $400,000, that will enable us to complete that environmental impact statement. As a result of that, we may be able to, if the environmental impact statement indicates this, we may be able to pump from the canals and irrigate an additional 20,000 or 30,000 acres at no additional cost.

The costs of pumping from the canal will come from the farmers who are interested in that water and, of course, this is going to provide increased revenues back to the government.

So that is another reason we are interested in the environmental impact statement. As I said, the state of Washington has put considerable money into it and we are only asking $400,000 from the United States.

I want to go back and talk a little bit more about this drainage. We feel that we need another $900,000 for drainage in this coming year, and we would certainly hope that you will take a careful look at that.

With these requests, our budget, that is, the amount of money that we would be receiving for this year, is—I don't have that figure right here handy, Chan.

Mr. BAILEY. It is $4.47 million. We want an increase from $2.87 to $4.47 million.

Mr. DAVIS. Remember that in 1987 we had over $7 million, so we have taken a big cut, a huge cut from $7 to $4.4 million.

Mr. BAILEY. Right.

Mr. DAVIS. $7.1 to $4.4 million. We realize times are hard every place, but this is a critical matter, and we would certainly appreciate your positive response to it. Do you have anything else to add, Chan?

Mr. BAILEY. No. The only thing I would like to do, if I could, is I have a letter from the state of Washington here with their offer of another $50,000 for cost sharing on the environmental impact statement. If we could put that in the record?

Senator HATFIELD. Sure, I would be happy to have it. We will place this in the record at this point.

Senator HATFIELD. Thank you very much, Mr. Davis, for your comments.

Mr. BAILEY. Do you have anything further or do any of you other gentlemen in have anything?

Mr. ERICKSON. That $900,000 we are asking for is what they took away from us last year.

Mr. DAVIS. We are asking for what we had last year to keep up the drainage program.

Senator HATFIELD. As you know, the major part of the Bureau's money is going to the Central Arizona and to the Central Utah project. We may need to squeeze out a little bit for these other projects.

Mr. DAVIS. Thank you, Senator.

Senator HATFIELD. Thank you very much. We appreciate your coming back to testify.

[The statements follow:]

STATEMENT OF CHAN BAILEY, EXECUTIVE SECRETARY, COLUMBIA BASIN DEVELOPMENT LEAGUE

We respectfully ask for a $1,600,000 increase in the Columbia Basin Project Irrigation Construction Program for FY88.

Construction of drains on presently irrigated farm land is part of the Columbia Basin Project's Repayment Contract. The Bureau has, in the past, stayed fairly well abreast of drainage needs. As a result only some smaller areas are requiring drains now. If the program is kept at a reasonable pace cost of drainage on the Project will remain small but if wet areas are allowed to increase in size due to budget reductions, costs of construction will increase in the future. Two drains that were planned and ready for construction in FY87 were dropped due to Project funds being used elsewhere. We urge that $900,000 be added to the proposed FY88 budget to retain the drainage program at the proper level.

The Environmental Impact Statement that was started in 1985 concerning the unfinished portion of the Columbia Basin Project is now seventy-five percent complete. There are no funds to complete the E.I.S. in the FY88 budget. The Washington State Department of Ecology has already cost shared $207,000 and are willing to cost share another $50,000 if it is completed.

Work is presently being done on a water conservation study for the Project as part of the E.I.S. and it ties directly to the water right for the unfinished portion of the Project which requires renewal in 1989. Completion of the E.I.S. is vital so that further planning can be done based on facts and not emotion. We request that an additional $400,000 be added to the Project's budget for FY88 for completion of the E.I.S.

The above two items are for contract expenditures only. Another $300,000 would be needed as overhead costs for inspection, planning, etc., for a total Columbia Basin Project increase of $1,600,000 for FY88. The total FY88 budget asked for is $4,470,000. This compares to the FY87 budget of $7,110,000.

This delegation also wants this committee to know that we disagree with the Department of Interior's plans to centralize all of the Bureau of Reclamation's planning. Neither do we agree with their new policy of construction funding. Completion of on going projects is important but to cut back on planning, drop environmental impact statements that are almost complete, jeopardize existing water rights and allow productive land that is paying a return on the investment to go wet is not good business now or for the future.

We have letters of support for this budget increase from the Washington State Departments of Ecology and Agriculture and the Chambers of Commerce in Ephrata, Moses Lake, Othello, Pasco, Quincy, Spokane and Warden.

STATEMENT OF SOUTH COLUMBIA BASIN IRRIGATION DISTRICT

SCOPE:

I. Request that the President's Budget be increased by an appropriation of funds to continue the timely completion of the Environmental Impact Statement for continued development of the Columbia Basin Project and to regain and restore a continued and stable level of drainage construction.

II. Support the Presidential Fiscal Year 1988 Budget, Department of Interior Program for the Bureau of Reclamation, Columbia Basin Project at $4.47M construction funding level.

Our contract with the United States for the construction of facilities to provide a water supply for approximately 370,000 acres was dated October 9, 1945 and signed by Harold L. Ickes for the United States and by Loen L. Bailie for the South Columbia Basin Irrigation District. The latest amendment to that contract was dated December 18, 1968 and signed by H. T. Nelson for the United States and by Clair W. Hobkirk for the District. That amendment transferred the responsibility of operations and maintenance of Project Facilities to the District.

Today, facilities have been constructed to provide a water supply to approximately 226,000 acres, or 61% of the original contractual acreage in the South Columbia Basin Irrigation District. The District lands lie in the southern portion of the Columbia Basin Project. The present irrigable land total within the Quincy, East, and South Columbia Basin Irrigation Districts is approximately 558,000 acres. Said total repesents 51% of the ultimate Project development of 1,095,000 acres. The orderly sequence of development over the past fifty years, which at times has been slowed due to national priorities, has promoted steady growth for the agri-business support communities within the Project boundaries. Individual communities have not fallen prey to the "boom and bust scenario" as a result of declining construction activities. Reclamation, transformation, and/or development - whichever word you prefer - of the dry, semi-arid lands of Southcentral Washington has been beneficial for the state and our nation. In excess of 70 different crops are grown on lands which were previously singular-cropped lands - dryland wheat or pasture - prior to the Project development.

On behalf of the Board of Directors of the South Columbia Basin Irrigation District, I am pleased to inform you and your committee members that we request the President's Budget, as it relates to energy and irrigation development on the Columbia Basin Project for the Fiscal Year 1988, be increased by an appropriation of funds to continue the timely completion of the Environmental Impact Statement for continued development of the Columbia Basin Project and to regain and restore a continued and stable level of drainage construction. The President's Budget as proposed, $2.7M, allows only for constuction of those authorized FY 1987 drains which were not awarded for construction due to Bureau of Reclamation budget restrictions.

We recommend that the President's Budget be increased by $1.6M. This increase will result in a total budget for the Columbia Basin Project in FY88 of $4.47M which is approximately sixty-three percent (63%) of the authorized FY87 funding level for the Project.

Of the $1.6M FY88 budget increase request, $0.4M is necessary to complete the work on the Environmental Impact Statement addressing continued development of the Project. The federal water right withdrawal for the undeveloped lands on the Project expires in 1989. At that time, the State of Washington must determine whether or not to extend the federal withdrawal. The information to be provided by the EIS will be crucial in this major regional resource decision. For that reason, the State of Washington has committed to increase its level of cost sharing another $50,000 in addition to the $207,000 it has contributed to date; provided, the EIS is in draft form by the end of Fiscal Year 1988. Your consideration of the increase in necessary funds for timely completion of the EIS is encouraged.

The remainder of the budget increase request, $1.2M, is needed to regain and restore a continued and stable level of drainage construction within the developed areas of the Project. It is estimated that 30-35,000 acres will need drainage facilities over the next 10-15 years. In short, the drainage is necessary for recapturing the land's productive potential, the long term sustainability of this federal irrigation project, and the affected landholder's ability to maintain a viable farm operation.

The President's Fiscal Year 1986 Budget with the requested increase of funds is attached to the written testimony for your review. We support the Columbia Basin Project Fiscal Year 1988 Program with the noted request increase.

On behalf of the Board of Director's of the Quincy, East, and South Columbia Basin Irrigation Districts and the Project waterusers, I thank you for your past cooperation and courtesies, and encourage your consideration of the increase in appropriation of funds along with the favorable support of the President's Budget. We look forward to the ultimate completion of the Columbia Basin Project as originally authorized and reauthorized by Congress almost fifty years ago.

THE PRESIDENT'S FISCAL YEAR 1988 BUDGET
WITH REQUESTS FOR
ENVIRONMENTAL IMPACT STATEMENT COMPLETION FUNDS
and
ADDITIONAL DRAINAGE CONSTRUCTION FUNDS
DEPARTMENT OF THE INTERIOR PROGRAM
FOR THE
BUREAU OF RECLAMATION

WASHINGTON

Columbia Basin Project

Major Items	FY 1988
Irrigation Facilities	
Drainage Construction	$2,870,000
Additional Drainage Construction	1,200,000
EIS Completion Funds	400,000
Total Irrigation Facilities	$4,470,000

For Comparative Purposes:	
*FY87 CBP Budget	$7,110,000
FY86 CBP Budget	$7,535,000

COLUMBIA BASIN PROJECT DELEGATION

March 30 - April 1, 1987 Washington D.C.

Bernard Erickson, 697 Edgewater Lane, Moses Lake, WA 98837
President, Columbia Basin Development League
Farmer in undeveloped portion of the Project

Chan Bailey, P.O. Box 715, Othello, WA 99344
Executive Secretary, Columbia Basin Development League
Development Director, Columbia Basin Project Irrigation Districts

Earl Terwilleger, P.O. Box 96, Warden, WA 98857
Director, East Columbia Basin Irrigation District
Project farmer

Rex Lyle, P.O. Box 62, Ritzville, WA 99169
Director, Quincy-Columbia Basin Irrigation District
Farmer in undeveloped portion of the Project

Edward Spaulding, Star Route 1, Royal City, WA 99357
President, Quincy-Columbia Basin Irrigation District
Project farmer

Richard Stevens, Route 1, Box 484, Soap Lake, WA 98851
Vice-President, Quincy-Columbia Basin Irrigation District
Project farmer

Terrill Davis, 5452 West SR-260, Connell, WA 99326
Director, South Columbia Basin Irrigation District
Project farmer

Rogers Neff, P.O. Box 612, Pasco, WA 99301
Vice-President, South Columbia Basin Irrigation District
Farmer in undeveloped portion of the Project

Merle Gibbens, P.O. Box 1006, Pasco, WA 99301
Secretary-Manager, South Columbia Basin Irrigation District, Irrigation Division

STATEMENT OF QUINCY-COLUBIA BASIN IRRIGATION DISTRICT

Dear Mr. Chairman and Members of the Committee:

In re: Fiscal Year 1988 Budget Request
For Columbia Basin Project

The Repayment Contracts between the United States and the Project districts provide that the United States will construct necessary drainage facilities. While funds for drainage work were appropriated for F.Y. 1987, two drainage contracts were deferred. Drainage of Project lands is essential to enable landowners to meet their annual repayment obligation to the United States. To enable the Bureau of Reclamation to maintain a minimum drainage program, an additional $900,000 is requested over the amount presently contemplated for F.Y. 1988.

The Columbia Basin Project has not yet been fully constructed. In 1938, the United States, pursuant to Washington State law, withdrew from the Columbia River sufficient waters to irrigate the Project. The withdrawal of water for the second half of the Project, if it is not to be lost to the United States, must be extended in 1989 by the Washington State Department of Ecology. The Bureau is presently preparing an E.I.S. for the second half of the Project. While the E.I.S. is approximately 3/4ths completed, the F.Y. 1988 budget does not provide funds for its completion. The Department of Ecology has advised that it needs the E.I.S. completed so as to determine whether the water rights of the United States should be extended. It is willing to contribute $50,000 toward the cost of completing the E.I.S. This is in addition to $207,000 previously cost-shared by the Department of Ecology. We are therefore requesting that $400,000 be authorized to complete the E.I.S. so as to protect the withdrawal of water by the United States for the eventual completion of the Project.

To summarize, the Quincy District is requesting that the proposed budget for the Columbia Basin Project be increased by the sum of $1,600,000 for drainage construction, completion of the E.I.S. and related overhead and administrative expenditures. The requested increase would result in a total Project budget for F.Y. 1988 of $4.47 million dollars, as compared to the 1987 F.Y. budget of $7.11 million dollars.

STATEMENT OF THE SOUTH COLUMBIA BASIN IRRIGATION DISTRICT

The South Columbia Basin Irrigation District requests the Senate to increase the President's Fiscal Year 1988 construction budget for the Columbia Basin Project in south-central Washington by $1.6M. This increase will result in a total budget for the Columbia Basin Project in FY 1988 of $4.47M which is approximately sixty-three percent (63%) of the FY 1987 funding level for the Project.

By comparison, the $4.47M requested for FY88 is also considerably less than the FY86 Project construction budget of $7.535M. The President's proposed FY88 construction funding level for the Columbia Basin Project--$2.87M--is 38% of the FY86 budget level and 40% of the FY87 budget level. The magnitude of the President's proposed reduction will "successfully" and substantially delay and undermine the present and future drainage and construction program needs in the Columbia Basin.

Of the $1.6M FY88 budget increase request, $0.4M is necessary to complete the work on the Environmental Impact Statement addressing completion of the Project. The federal water right withdrawal covering those lands expires in 1989. At that time the State of Washington must determine whether or not to renew the federal withdrawal. This will be a major regional resource decision. The information to be provided by the EIS appears to be crucial to that decision. For that reason, the State of Washington has offered to increase its level of cost sharing up to another $50,000 in addition to the $207,000 it has contributed to date, provided the EIS is in draft form by the end of Fiscal Year 1988. Even without any consideration of the document's importance to elected officials, administrators, and others in reaching a concensus on the upcoming regional resource allocation, it would be a considerable waste of expended human and financial resources to curtail work on the EIS at this time.

The remainder of the budget increase request, $1.2M, is needed to regain a continued and stable level of drainage construction due to recently imposed FY87 budget restrictions. Within the presently developed areas, it is estimated that 30-35,000 acres need to be drained over the next 10-15 years. The drainage is necessary for recapturing the land's productive potential, the long term sustainability of these federal irrigation projects, and the affected landholder's ability to maintain a viable farm operation.

Your support of a $4.47M FY88 construction budget for the Columbia Basin Project is encouraged.

STATEMENT OF EAST COLUMBIA BASIN IRRIGATION DISTRICT

Dear Senator Johnston:

The East Columbia Basin Irrigation District requests the Senate to increase the President's proposed budget for Fiscal Year 1988 for the Columbia Basin Project by $1,600,000. This increase will result in a total budget for the Columbia Basin Project of $4,470,000 which is substantially less than the $7,110,000 enacted in the Fiscal Year 1987 budget. Actual expenditures on the Project for FY87 will be significantly less than the amount budgeted by Congress because the Bureau of Reclamation has cancelled two drain construction projects authorized by that budget.

The $4,470,000 requested for FY88 is also much less than the $7,535,000 approved in the Fiscal Year 1986 budget. The magnitude of the reduction in the President's proposed budget compared to FY86 and 87 levels is too severe. It will prevent the completion of on going activities.

$400,000 of the additional funds are necessary to finish work on the Environmental Impact Statement studying completion of the Project. The federal water right withdrawal covering those lands expires in 1989. At that time the State of Washington must determine whether or not to renew the federal withdrawal. This will be a major regional resource decision. The information to be provided by the EIS appears to be crucial to that decision. For that reason, the State of Washington has offered to increase its level of cost sharing up to another $50,000 in addition to the $207,000 it has contributed to date, provided the EIS is in draft form by the end of Fiscal Year 1988. The EIS is well over half complete now. It would be a waste to cancel it at this stage, considering its potential importance in 1989.

The remainder of the additional funds requested are necessary to maintain a satisfactory level of drain construction. The amount proposed in the President's budget does little more than construct those drains authorized for in the FY87 budget but cancelled by the Bureau of Reclamation.

Within the first half of the Project approximately 30,000 to 35,000 acres need to be drained. The level of construction activity permitted by the proposed $4,470,000 budget, would complete that drainage work in 10 to 15 years if that funding level continues. These drains will protect presently irrigated farmland and are necessary to the long term sustainability of this federal irrigation project.

LETTER FROM HEDIA ADELSMAN, PROGRAM MANAGER, WATER RESOURCES PROGRAM, DEPARTMENT OF ECOLOGY, STATE OF WASHINGTON

FEBRUARY 17, 1987.

Mr. CHAN D. BAILEY,
Executive Secretary,
Columbia Basin Development League,
Othello, Wash.

DEAR MR. BAILEY: As you may be aware, the Department of Ecology, Water Resources Program, is concerned about the delay or possible shelving of the federal environmental impact statement on the second half of the Columbia basin project. It is our understanding that the Bureau of Reclamation's planning funds for fiscal year 1988 will be eliminated for the most part. Therein lies our concern and the consequences of such budget cut effects.

When the present withdrawal of water for the second half expires at the end of 1989, the decision will be a major focal point of interest. The Department of Ecology needs this information to make a credible evaluation. We believe the EIS alternatives being developed would identify many of the unknowns, including the water needs and updating costs, including opportunity costs of power production, and provide essential information on demands for agriculture and energy.

The Department of Ecology did make an initial investment of $207,000 on a preliminary socio-economic study of which the results are being utilized in the EIS. This investment is another reason why Ecology hopes to see a final product since it was made with the intent to identify unknowns.

We have given serious consideration to providing additional cost-sharing funds if it would help arrange federal priority funding for completion of the EIS. The State of Washington, acting through the Department of Ecology, would sincerely weigh and review the facts of providing an additional $45,000 to $50,000 maximum toward cost-sharing on the EIS. The exact amount depends on the total estimated cost of the EIS, and we would have to establish provisions that: (1) state funds would not be available until there was a federal commitment to complete the EIS, (2) federal funds have been appropriated to complete the EIS, and (3) the EIS would be essentially completed by September 30, 1988.

A completed EIS and its alternatives and information can be utilized to determine and finalize a decision acceptable to all the people of the state.

Your thoughts on the above would be welcome.

Sincerely,

HEDIA ADELSMAN,
Program Manager, Water Resources Program.

LETTER FROM C. ALAN PETTIBONE, DIRECTOR, WASHINGTON STATE DEPARTMENT OF AGRICULTURE

MARCH 5, 1987.

Mr. C. DALE DUVALL,
Commissioner of Reclamation,
U.S. Department of the Interior,
Washington, DC.

DEAR COMMISSIONER DUVALL: From the viewpoint of an agency head, I can certainly appreciate the difficulties of prioritizing constituent demands and projects under a budget reduction scenario. As your agency considers the potential effect and most beneficial use of available funds, I would request that you consider the Columbia Basin Project—at least in terms of Bureau funding for completion of the environmental impact statement.

The EIS is an absolutely necessary component for long-term consideration of this state's water resources and assessment of irrigation potential. I'd suggest that, from an agricultural perspective, we're at a real turning point in allocation of this state's resources, and we simply cannot proceed in any direction or on any basis without a complelted EIS. It is for this reason that I strongly urge you to support full funding of the impact statement for the Columbia Basin Project.

If I can provide any assistance in this matter, please don't hesitate to contact me.

Sincerely,

C. ALAN PETTIBONE,
Director.

LETTER FROM LINDA SHERWOOD, EPHRATA (WASH.) CHAMBER OF COMMERCE

MARCH 20, 1987.

Mr. CHAN D. BAILEY,
Executive Secretary,
Columbia Basin Development League,
Othello, Wash.

DEAR MR. BAILEY: On behalf of the Ephrata Chamber of Commerce, we are concerned about the delay or possible shelving of the federal environmental impact statement [EIS] on the second half of the Columbia Basin Project. It is our understanding that the Bureau of Reclamation's planning funds for fiscal year 1988 will be eliminated for the most past. Therein lies our concern and consequences of such a budget cut effects.

Agriculture is the largest economic factor of the area. When the present withdrawal of water for the second half expires at the end of 1989, the decision will be a major focal point of interest. We recognize that any quick development on the project is out of the question, but to not work for renewal of the water right and lose it would deprive the state of a great potential resource in the future. From an agricultural perspective, we are at a real turning point in allocation of this state's resources and it would be impossible to proceed in any direction or on any basis without a completed EIS. It is for this reason that we strongly urge you to support full funding of the impact statement for the Columbia Basin Project.

Thank you for your consideration on this very important matter.

Sincerely,

LINDA SHERWOOD,

LETTER FROM KAREN WAGNER, MANAGER, MOSES LAKE AREA (WASH.) CHAMBER OF COMMERCE

MARCH 19, 1987.

Mr. CHAN D. BAILEY,
Executive Secretary,
Columbia Basin Development League,
Othello, Wash.

DEAR MR. BAILEY: For many years the Moses Lake Area Chamber of Commerce has continued to support the continued orderly development of the Columbia Basin Project. Because agricultural growth and development has been a major factor in the economy of Moses Lake and the entire Columbia Basin, we would support the Columbia Basin Development League in their position requesting funding in the Bureau of Reclamation budget. It is essential that the environmental impact statement for the second half of the Columbia Basin Project be completed and that necessary drainage projects be completed. We are advised that about 1.6 million dollars is necessary for this endeavor.

I am sending a copy of this letter to Senators Dan Evans and Brock Adams, and Congressman Sid Morrison, as well as Senator Frank Hansen and Representatives Curt Smith and Glyn Chandler.

Very sincerely,

KAREN GORDON WAGNER,
Manager.

LETTER FROM LAVERNE AMEND, PRESIDENT, QUINCY VALLEY (WASH.) CHAMBER OF COMMERCE

MARCH 24, 1987.

Mr. CHAN D. BAILEY,
Executive Secretary,
Columbia Basin Development League,
Othello, Wash.

DEAR MR. BAILEY: In assessing the consequences that would develop if funds were not sufficiently allocated for the completion of the environmental impact statement and for continued efforts on the drainage program, the executive committee of the Quincy Valley Chamber of Commerce voted to support the Columbia Basin League in their request for Bureau of Reclamation funding.

We feel stronglly that the environmental impact statement must be completed as a basis for future development of the state's resources!

Good luck in your efforts, Mr. Bailey, in representing the best interests of the Columbia Basin, and special thanks for your hard work and efforts over the years! If we can help in any way, please don't hesitate to call on us.

Sincerely yours,

LAVERNE AMEND, *President.*
DONNA SELBY, *Manager.*

LETTER FROM DICK ELLINGWOOD, CHAIRMAN, BOARD OF TRUSTEES, SPOKANE AREA (WASH.) CHAMBER OF COMMERCE

MARCH 4, 1987.

Hon. SID MORRISON,
House of Representatives,
Washington, DC.

DEAR CONGRESSMAN MORRISON: On February 23, 1987, the executive committee of the Spokane Area Chamber of Commerce voted to support the Columbia Basin Development League in their position requesting reallocation of funds in the Bureau of Reclamation budget. The Spokane Chamber feels it is important to complete the environmental impact statement and to complete the necessary drainage projects. Approximately $1.6 million is necessary for this work.

We will be following up on this letter in our annual visit to Washington, DC, in April.

Sincerely,

DICK ELLINGWOOD,
Chairman, Board of Trustees.

LETTER FROM PETER L. STAUDENRAUS, PRESIDENT, WARDEN (WASH.) CHAMBER OF COMMERCE

MARCH 25, 1987.

Mr. CHAN D. BAILEY,
Executive Secretary,
Columbia Basin Development League,
Othello, Wash.

DEAR MR. BAILEY: It has come to our attention that, due to proposed fiscal year 1988 budget cuts, the Bureau of Reclamation does not intend to allocate funds for completion of the federal environmental impact statement [EIS] and necessary drainage projects for the Columbia Basin Project.

These are areas of vital concern to the Warden Chamber of Commerce. As you know, Warden is located directly between the completed and uncompleted portions of the Columbia Basin Project. Elimination of these programs could have a devastating impact upon the future of our community.

Water is the lifeblood of the Columbia Basin and we must do all we can to preserve our water rights for the second half of the Columbia Basin Project when they come up for renewal in 1989.

The environmental impact statement for the second half of the Columbia Basin Project is 75-percent complete, thanks to a large investment in time and money by the Bureau of Reclamation and the state of Washington. If we are to protect our water rights it is imperative that the EIS be funded and completed by the end of fiscal year 1988.

We also need to continue work on the drainage projects that were dropped in fiscal year 1987.

The Board of Directors of the Warden Chamber of Commerce has unanimously voted to support the Columbia Basin Development League in your pursuit of these goals.

Sincerely,

PETER L. STAUDENRAUS,
President.

SHOCCOE DAM, MISS.—OPPOSITION

STATEMENT OF LOUIE MILLER, CITIZENS FOR COMPREHENSIVE FLOOD CONTROL

Senator HATFIELD. Citizens for Comprehensive Flood Control; Mr. Louie Miller of Mississippi.

Good morning, Mr. Miller. Do you have any associates with you?

Mr. MILLER. No, sir.

Senator HATFIELD. You are all alone?

Mr. MILLER. I am here by myself today. I appreciate your having us.

Senator HATFIELD. We are happy to have you here this morning. Your entire statement will be placed in the record. If you will summarize it, I would appreciate it.

Mr. MILLER. Yes, sir. Basically, the Shoccoe dry dam project is not economically viable and lacks both widespread public and political support. Based on this information, we are asking the Corps of Engineers to not proceed with the general design memorandum for Shoccoe. Instead, we ask members of the subcommittee to consider directing the Corps of Engineers to reevaluate alternatives to this project.

Three of the more serious cost omissions dealing with the benefit-cost ratio are the Natchez Trace Parkway which is a unit of the National Park Service. Currently, the Corps of Engineers only has $5 million in the budget for the relocation of the parkway. The Park Service estimates that it costs $1.5 to $2 million per mile to replace the roadway.

There is roughly 10 miles of the parkway that will have to be relocated. The actual cost for relocating the parkway would be closer to $20 to $22 million.

There is also a relocation of new State Highway 25, 1.6 miles of it, plus a large bridge at the Fannegusha Creek that will have to be reconstructed. Currently, the Corps of Engineers only has $950,000 in the budget for this. We have documented costs from the state highway department valued at $2.7 million.

Also, another cost overrun that is of concern to us is the approximately 35,350 acres would be acquired by an easement, and also, there will be 3,500 acres that would be purchased fee simple. The cost of the easement is estimated at 28 percent of the fair market value, or $6,185,000.

Since this easement will restrict development and requires that any structures for permanent or temporary human habitation be removed, and since approximately 20,000 out or below elevation 314 would flood on an annual basis, this figure of 28 percent would not hold up in a court of law. The actual cost for this restrictive easement alone would be closer to $17 to $18 million.

These three concerns add up to $30.5 million that is unaccounted for, and we feel this would be destroy the cost-benefit ratio of the Shoccoe project, which is currently 1.2 to 1.

LOCAL OPPOSITION

Also, the opposition to the project is very strong. The Pearl River Basin Development District, the intended local sponsor, introduced two bills in the Mississippi legislature this session which were designed to finally give legal authority to sponsor the Shoccoe Dam. The House Bill 806 was resoundingly defeated, and the Senate Bill 2746 died in Senate subcommittee.

Since the bill was a revenue bill, it required a three-fifths majority to pass, and it did not even receive a majority of the members presents. Six counties have resolutions from their boards of supervisors opposing construction of the dam. Four of these numbers are members of the PRBDD and exercised. This, by law, prohibits the PRBDD from legally sponsoring this project.

Also, there are several organizations in the state that are opposed to the project including the Mississippi Farm Bureau Association, the Mississippi Forestry Association, International Paper Co., the Pearl River Wildlife Management Association, the city of Carthage in Leak County, and the city of Clinton, a suburb of Jackson and Hinds County.

There is a large percentage of taxpayers in the two counties the project is designed to protect that are also opposed to the project due to unwise flood plain development. Out of the 96,000 homes in Hinds County in 1979, the flood of record, 1,935 homes flooded, or 2 percent. As stated by Hinds County Representative Singletary, that is too much money for too little protection for too few people.

Also, in 1985, our petitioned was sent to the Mississippi delegation with 7,800 signatures on it in opposition to the project.

Senator HATFIELD. Thank you, Mr. Miller. I appreciate your statement, and you are here not to request money. That is pleasant.

Mr. MILLER. Yes. There is $1.9 million on the GDM that we would like to see go to something that has some political support.

Senator HATFIELD. Thank you very much.

Mr. MILLER. Thank you.

[The statement follows:]

STATEMENT OF THE CITIZENS FOR COMPREHENSIVE FLOOD CONTROL

The Shoccoe Dry Dam project is not economically viable and lacks both widespread political and public support. Based on the information contained herein, the COE should not proceed with the General Design Memorandum for Shoccoe. Instead, we ask that the members of the subcommittee consider directing the Corps of Engineers to re-evaluate alternatives to this project.

OVERVIEW

OPPOSITION / LOCAL SPONSOR: The Pearl River Basin Development District (PRBDD), the intended local sponsor, introducted two bills in the MS Legislature this session which were designed to fund and give legal authority to sponsor the Shoccoe Dam. The House Bill #806 was severely defeated and the Senate Bill #2746 was never taken up by the senate committee. The major concerns expressed in the House debate were: serious cost omissions, questionable benefits and damages to upstream citizens and federal and state resources. Since the bill was a revenue bill it required a 3/5 majority to pass, it did not receive a majority of the members present and was defeated by 14 votes. The PRBDD is prevented from being the local sponsor for this project by a 1984 state statute, allowing any three county members to veto the project.

Six counties have official resolutions from their Board of Supervisors opposing the construction of the dam. Four of these counties are members of the PRBDD and have exercised their veto power. The following organizations are also in opposition to the project; MS Farm Bureau Federation, MS Forestry Association, International Paper Co, Pearl River Wildlife Management Assoc, City of Carthage in Leake Co, and the City of Clinton, a suburb of Jackson in Hinds Co. A large percentage of taxpayers in the two counties the project is designed to protect are also opposed to the project due to unwise floodplain development and monetary concerns. There are 96,000 homes in Hinds Co. according to the MS Research and Development Center. In 1979, the flood of record, 1,935 homes or 2% received flood damages. As stated by a Hinds Co. representative, "This is too much money for too little protection, for too few people".

BENEFIT / COST RATIO: There have been serious omissions in the ACTUAL COSTS which will be incurred due to construction of the dam. Three of these omissions alone account for $30.55 million dollars which have been omitted from the cost of the project. Over 10 miles of the Natchez Trace Parkway, a unit of the National Park System, will have to be relocated as a result of construction of the dam. The dam will also impact the scenic recreational areas of Cypress Swamp, River Bend, Ratliff Ferry Landing and Coals Bluff. The additional homes and businesses that will be impacted due to the relocation of the Natchez Trace has not been addressed by the Corps of Engineers. Approximately 38,850 acres in four counties will have to be acquired by a restrictive easement which is currently estimated by the COE at 28% of the fair market value. Since approximately 20,000 acres of that land will flood on an annual basis and the easement requires that any structure for permanent or temporary human habitation be removed, the easement should be estimated at 80% to 100% of the fair market value.

Other issues contained in the attached review are; Relocation of a portion of State Highway 25, Access to a 3 trillion cubic ft. CO2 Dome, Exaggerated benefits, Lack of flood protection for many homes and businesses in the targeted area, Historical perspective and Alternatives to this project.

REVIEW OF PEARL RIVER, SHOCCOE DRY DAM PROJECT

BENEFIT/COST RATIO

INACCURATE COST PROJECTIONS

A. NATCHEZ TRACE PARKWAY: The dam site will cross the Natchez Trace Parkway, a unit of the National Park Service, at or near the nature area of Cypress Swamp, and will periodically flood 10 or more miles of the parkway. Only $5 million dollars has been included in the cost estimate for damages to the park. The Park Service estimates that it costs $1.5 to $2 million per mile to replace the roadway alone and this does not include monies for the acquisition of additional land and homes. The area to the west of the Natchez Trace, is a highly populated area and none of the impacts from this relocation have been accounted for in the Interim Report. The ACTUAL COSTS for relocating the parkway would be closer to $20 -$22 million, disregarding the additional homes and businesses that would be impacted.

**(COE Interim Report, Revised July 1985, p. C-3-12 -
Jan. 14, 1987 letter from Regional Director, SE Region, National Park Service to Colonel Stevens, COE Vicksburg, MS)**

B. STATE HIGHWAY 25: The dam will also require the reconstruction of 1.6 miles of the newly completed state highway and the bridge at the Pannegusha Creek. Only $950 thousand dollars has been included for this reconstruction. The State Highway Department states the ACTUAL COSTS will be $2.7 million, at current price levels.

(COE Interim Report, Revised July 1985, p. C-3-12 - Feb. 25, 1987 letter from MS District Highway Engineer to Chairman, Senate Finance Committee, MS State Legislature)

C. LAND ACQUISITION: Approximately 50,000 acres in Leake, Scott, Madison and Rankin counties was used as the original COE figure for the Shoccoe pool. In 1985, the COE dropped 11,350 acres because they determined that the flood stage would not be increased in this area. This acreage, however, would be subject to an increased flood duration, of as much as 8 to 10 days in some areas. The real estate area was also subsequently reduced due to a design change lowering the emergency spillway. Of the remaining acreage, 35,350 acres will be acquired by an easement, and 3,500 acres will be purchased fee simple. The cost of the easement is estimated at 28% of the fair market value or $6,185,200 dollars. Since this easement will restrict development and requires that any structure for permanent or temporary human habitation be removed, and since approximately 20,000 acres, at or below the elevation of 314 will flood on an annual basis, this figure of 28% will not hold up in a court of law. The ACTUAL COST for this restrictive easement alone would be closer to $17 - $18 million dollars.

(COE Interim Report, Revised July 1985, p. C-3-12 - Noblin Real Estate Cost Review, May 1983)

D. CO2 DOME: The Jackson CO2 Dome is located in Rankin, Madison and Scott counties and a large portion of the dome is located within the Shoccoe pool. The dome contains an estimated 3 trillion cubic ft. of CO2 that is used to recover oil from depleted fields in MS. Additional amounts will also be available for sale to other companies to recover more oil. Shell has invested $250 million dollars in a pipeline to take this CO2 to wells in south MS. Shell estimates the project will take 300 man years to complete and will involve many jobs and approximately $260 million dollars in severance taxes and royalties. If access to this area is interrupted by Shoccoe there will be a tremendous loss of potential revenues for the state. The COE has not addressed any impacts to the Jackson Dome resource.

(Newsclippings, Daily Leader, Brookhaven MS 12/6/84 - Press Register, Clarksdale MS 8/15/84 - Clarion Ledger 8/14 & 8/19/84)

EXAGGERATED BENEFITS

A. FLOOD DAMAGES: The actual amount of damages to Jackson and Flowood in 1979 was $223,000,000. In 1983, the damages were $31,900,000 dollars. Even by adding 1979 and 1983 damages together they do not equal the $496,500,000 of benefits claimed in the Interim Report. A portion of this figure is derived by pretending that the Flowood (East Jackson Levee) was overtopped. " The April 1979 flood did not overtop the East Jackson Levee. For damage calculations, however, one-half of the area under the damage versus frequency curve which represents the levee freeboard can be counted. If the East Jackson Levee was overtopped, the same event would cause approximately $500,000,000 damages in 1984 dollars...."

(COE Interim Report, Revised July 1985, p. B11)

B. CONTENT VALUES: The COE valued the contents of all residential structures at 75% for flood damage calculations. This percentage was used on structures ranging in value from $20,000 to $121,000 dollars. The standard homeowner policy insures contents at 50% of the structure value. Insurance companies state that at 50% most homeowners are over-insured due to the depreciation of content values at the same time that structure values are appreciating.

(COE Interim Report, Revised July 1985, p. B9 - MS Insurance Commission)

C. FLOOD PROTECTION: The COE claims that Shoccoe will be 88% effective, in the Interim Report. This is based on dollars of damages alone and not the lack of any flooding in a specific structure (i.e. 2 ft. of water in a structure is less damaging than 4 ft.). This percentage does not take into account the large amount of fill activity which has occurred in the floodplain since 1979. This fill has exacerbated the flooding of pre-79 structures due to displacement of flood waters -1 cubic yd. of fill material displaces 200 gallons of water.

Shoccoe Dam will allow many of the flooding problems to continue, even in the targeted area of Jackson. At least 787 homes and businesses will still receive flood waters in a 200 yr. flood. When the number of structures is compared to the number which will be freed of any flooding, the percentage of effectiveness is much lower.

TYPE FLOOD	TOTAL	PROTECTED	STILL FLOODING	% EFFECTIVENESS
200	2,759	1,972	787	71.48
500	4,738	3,319	1,419	70.05
SPF	5,522	2,746	2,776	49.74

200 YEAR FLOOD - STRUCTURES STILL FLOODING BY AREA

AREA	HOMES	BUSINESSES	TOTAL
North East Jackson	388	1	389
Lakeland Drive	30	20	50
Downtown Jackson	109	165	272
South Jackson	66	8	74
Total	593	194	787

(COE Interim Report, Revised July 1985, p. B20, B38 - B43 - Rutherford Platt, Director of the Land and Water Policy Center, Univ. of Mass. at Amherst, Interview Clarion-Ledger, Jackson, MS Dec. 21, 1986)

LACK OF POLITICAL AND PUBLIC SUPPORT

A. MS LEGISLATURE: On Feb. 25, 1987, the MS House of Representatives resoundingly defeated House Bill #806, which was designed to fund and give legal authority to sponsor the Shoccoe Dam. The Senate Bill #2746 died in committee. The House Bill, after four amendments which essentially gutted the bill, was defeated by 14 votes. Since the bill was a revenue bill it required a 3/5 majority to pass and it did not even receive a majority of the members present. The major concerns expressed during debate were; cost omissions, questionable benefits, damages to upstream citizens and federal and state resources. Amendments to the bill demonstrate these concerns; 1. Allow any three counties in the Pearl River Basin to veto the project. 2. Remove "quick take" eminent domain power. 3. Require the local sponsor to pay for all costs to HWY 25 and 4. Require Hinds and Rankin counties taxpayers to vote on the issuance of the bonds to fund the dam.

(Newsclippings Clarion-Ledger, Jackson MS Feb. 1987)

B. OPPOSITION: Six counties have resolutions from their Board of Supervisors opposing construction of the dam. Four of these counties are members of the Pearl River Basin Development District (PRBDD), the intended local sponsor. These counties'veto of the project, prohibits the PRBDD from being the local sponsor, under a 1984 state law. The six counties are: Leake, Scott, Neshoba, Madison, Winston and Lawrence. The following organizations and city governments are also in opposition to the project: MS Farm Bureau Federation, MS Forestry Association, International Paper Co., Pearl River Wildlife Management Assoc., City of Carthage ,in Leake Co. and the City of Clinton, a suburb of Jackson in Hinds Co.

Other organizations have taken a stance on floodplain development, they are: the MS Wildlife Federation, Citizens for Comprehensive Flood Control, MS Audubon Society and the MS Sierra Club. These organizations have ask the EPA to intervene in the 404 permit review process in the Jackson/Flowood area, due to the large number of after-the-fact permits and complete non-compliance on the part of some developers.

(Copies of official resolutions from above mentioned counties and organizations ranging in date from 1982 - 1987. - Copies of letters to the EPA from the above mentioned organizations.)

C. TAXPAYER OPPOSITION: There are 96,000 plus homes in Hinds Co. according to the MS Research and Development Center. In 1979, the flood of record, 1,935 homes received flood damages, this constitutes 2%. As stated by a Hinds Co. representative "This is too much money for too little protection, for too few people".

Other taxpayer concerns are evidenced by letters to the editor, and to Boards of Supervisors, questioning continued floodplain development, subsidization of real estate developers' property values in the floodplain and damages to federal and state resources such as the Natchez Trace Parkway, Cypress Swamp, River Bend as well as popular recreational areas such as Ratliff Ferry Landing and Coals Bluff. The US Fish and Wildlife Service estimates that 88,500 man days are spent annually on recreation in the Shoccoe area. In 1984, petitions signed by taxpayers in opposition to Shoccoe, including many from Hinds and Rankin counties, were sent to the MS Congressional Delegation. These petitions contained nearly 8,000 signatures.

(COE Interim Report, Revised July 1985, p. B10, D-3-32 - Clarion-Ledger, Rep. Singletary, Clinton 1987 - Letters to the Editor, Clarion-Ledger 1987)

HISTORICAL PERSPECTIVE AND ALTERNATIVES

Jackson has a long history of flooding and several structural attempts have been made to solve flooding for the city. In the Flood Control Act of 1936, authorization for a cleared floodway for Jackson was obtained. City officials, in a resolution of Oct. 16, 1936, declined to provide both the necessary rights-of-way and the required agreement to maintain the project. The city, in 1947 requested that the COE provide sufficient flood control to allow for development of 320 acres at the MS State Fairgrounds and 6,310 acres in East Jackson. This resulted in the construction of the Jackson and East Jackson levees. Floodplain development in Jackson continued inside and outside of the levees. In 1959, the city voiced interest in the development of a "water supply, recreational reservoir". They were also interested in development of a federal project at the same site for "flood control". In coordinated planning studies, it was determined that a federal development with an allocated 31 ft. of flood storage on top of the conservation pool would CONFLICT WITH THEIR DESIRES. The wide range in pool elevations and frequent fluctuations of the reservoir within the flood storage pool would limit their plans for recreational use and the development of adjacent lands. The 40,800 acre reservoir was built 15 miles north of Jackson in Madison and Rankin counties. Today, the COE is recommending a "dry" reservoir upstream, again in the counties of Madison and Rankin, as well as the counties of Leake and Scott. The dam will destroy 38,850 acres in these counties. This approach continues to ignore the root of the flooding problem in Jackson, floodplain development not designed to account for the flooding which has occurred in the past. Any flood control plan for Jackson, to be effective and supported by the public, must address nonstructural controls, such as flood proofing, elevation, relocation of chronically flooded structures and strict floodplain management. Floodway clearing, dredging and levees should also be utilized to avoid once again destroying thousands of acres of homes, businesses, farm land and federal and state resources upstream.

(COE Interim Report, Revised July 1985, US Fish and Wildlife Coordination Act Report, D-3-10 thru D-3-22 - Journal of the American Planning Assoc., Spring 1982, "The Jackson Flood of 1979, A Public Policy Disaster", by Rutherford H. Platt)

HOUSE BILL # 806: Feb. 25, 1987, Defeat of bill to allow sponsorship of Shoccoe project

ROLL CALL
Mississippi House of Representatives
C. B. NEWMAN, SPEAKER

PAIRS YEA	PAIRS NAY
Simpson	Capps

DATE 2-25-87
NECESSARY FOR PASSAGE 3/5 (68)
BILL HB806
YEA 54
PRESENT 0
AMENDMENT
NAY ~~55~~ 57
ABSENT ~~12~~ 11
MOTION

ALDRIDGE	Y	HALL	Y	ROBERTSON	Y
[redacted]	[redacted]	HANSON	Y	ROBINSON, D. (20th)	Y
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ATKINSON	-	[redacted]	[redacted]	ROGERS	Y
[redacted]	[redacted]	HINES	Y	[redacted]	[redacted]
BOWLES	Y	[redacted]	[redacted]	SANTA CRUZ	Y
[redacted]	[redacted]	HOLMES	Y	SAVAGE	Y
[redacted]	[redacted]	[redacted]	[redacted]	SCARBOROUGH	Y
BRYAN	Y	[redacted]	[redacted]	[redacted]	[redacted]
BUCKLEY	Y	[redacted]	[redacted]	[redacted]	[redacted]
BUELOW	Y	JACKSON	Y	[redacted]	[redacted]
CAIN	Y	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	JUNKIN	Y	SHUMAKE	-
CAPPS	-	KING	Y	[redacted]	[redacted]
CLARK, R. G. (47th)	-	LAMBERT	Y	SIMPSON	-
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
CLARKE	Y	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
CRAWFORD	-	MAPLES	Y	[redacted]	[redacted]
DOBBINS	Y	MC COY	Y	[redacted]	[redacted] -
DOXEY	-	MC CRARY	-	THOMAS	Y
DUBAZ	Y	[redacted]	[redacted]	[redacted]	[redacted]
EAKES	Y	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	MERIDETH	Y	VECCHIO	Y
ELLIS	Y	MILLETTE	-	VINCE	Y
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ENDRIS	Y	MOAK	Y	[redacted]	[redacted]
ENDT	Y	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	MORROW	Y	[redacted]	[redacted]
FORD	Y	[redacted]	[redacted]	WERTZ	Y
FORTENBERRY	Y	[redacted]	[redacted]	WILBURN	-
FRAZIER	Y	NIPPER	Y	[redacted]	[redacted]
FREDERICKS	Y	[redacted]	[redacted]	WILLIAMS, C. V. (8th)	Y
[redacted]	[redacted]	OWENS	Y	WILLIAMS, G. B. (30th)	-
GARVIN	Y	PENNEBAKER	Y	WOODFIELD	Y
GREEN, J. D. (33rd)	Y	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PHILLIPS	Y	MR. SPEAKER	Y
[redacted]	[redacted]	POINDEXTER	Y		
[redacted]	[redacted]	PRICE	Y		
[redacted]	[redacted]	REEVES	Y		
HALBROOK	Y	REYNOLDS	Y		

HOUSE BILL # 806: Feb. 25, 1987, Amendment # 1 (Allow 3 counties to veto project)

ROLL CALL
Mississippi House of Representatives
C. B. NEWMAN, SPEAKER

PAIRS

YEA	NAY

DATE 2-25-87

NECESSARY FOR PASSAGE ______

BILL HB806

YEA 57

PRESENT 1

AMENDMENT A1

NAY 50

ABSENT 14

MOTION

ALDRIDGE	N	HALL	N	ROBERTSON	N
ALFORD	Y	HANSON	N	ROBINSON, D. (20th)	N
ANDERSON	Y	HENDERSON	Y	ROBINSON, W. L. (63rd)	N
ATKINSON	-	HENRY	Y	ROGERS	N
BLACKMON	Y	HINES	N	ROSS	Y
[redacted]	[redacted]	HOLLAND	Y	SANTA CRUZ	N
BRITT	Y	[redacted]	[redacted]	SAVAGE	N
BROOKS	Y	HOLSTON	Y	SCARBOROUGH	N
BRYAN	N	HORTON	Y	SCHOBY	Y
BUCKLEY	N	HUTTO	Y	SCOTT	Y
BUELOW	N	JACKSON	N	SHEPPHARD	Y
[redacted]	[redacted]	JONES	Y	SHORT	N
CALHOUN	Y	JUNKIN	N	SHUMAKE	-
CAPPS	N	KING	N	SIMMONS	-
CLARK, R. G. (47th)	-	LAMBERT	N	SIMPSON	-
CLARK, E. C. (79th)	Y	LANCASTER	Y	SINGLETARY	Y
[redacted]	[redacted]	LIVINGSTON	Y	STEVENS	Y
COMANS	Y	MALONE	Y	STRINGER	Y
CRAWFORD	-	MAPLES	N	STUBBS	Y
DOBBINS	N	MC COY	N	TATE	Y
DOXEY	-	MC CRARY	-	THOMAS	N
DUBAZ	N	MC INGVALE	N	TOWNSEND	N
EAKES	N	MC MILLAN	Y	UNDERWOOD	Y
EASLEY	Y	MC NATT	Y	VAN SLYKE	Y
ELLERBY	Y	MERIDETH	N	[redacted]	[redacted]
ELLIS	-	MILLETTE	-	VINCE	N
ELY	N	MILLS	Y	WADKINS	P
ENDRIS	N	MOAK	N	WALMAN	Y
ENDT	N	MOODY	Y	WARREN	Y
EVERETT	Y	MORROW	N	WATSON	Y
[redacted]	[redacted]	MOSS	Y	WERTZ	N
[redacted]	[redacted]	NETHERLAND	Y	WILBURN	-
FRAZIER	N	NIPPER	N	WILKERSON	N
[redacted]	[redacted]	NUNNALLY	Y	WILLIAMS, C. V. (8th)	N
FURNISS	Y	OWENS	N	WILLIAMS, G. B. (30th)	-
GARVIN	N	[redacted]	[redacted]	WOODFIELD	N
GREEN, J. D. (33rd)	N	PERRY	Y	YOUNG	Y
GREEN, D. L. (96th)	Y	PHILLIPS	N	MR. SPEAKER	N
GRISHAM	Y	POINDEXTER	N		
GRIST	Y	PRICE	N		
GUICE	Y	REEVES	N		
HALBROOK	N	REYNOLDS	-		

Table C-18 - Shoccoe Dam Construction Cost Estimate
(October 1984 prices)

Item No.	Description of Work	Quantity	Unit	Unit Cost	Total Cost
01.	**Lands and Damages**				
	Construction area				
.01	Recreation land	10	acre	3,000	30,000
.02	Wooded land	1,390	acre	550	764,500
.03	Timber	1,390	acre	400	556,000
	Downstream Emergency Spillway				
.04	Wooded land	100	acre	154	15,400
	Sedimentation area				
.05	Wooded land	2,100	acre	550	1,155,000
.06	Timber	2,100	acre	400	840,000
	Reservoir area				
.07	Recreation land @ 28%	500	acre	3,000	420,000
.08	Open land @ 28%	3,070	acre	1,300	1,117,480
.09	Wooded land @ 28%	30,180	acre	550	4,647,720
.10	Wooded land @ 100%	1,500	acre	550	825,000
.11	Timber @ 100%	1,500	acre	400	600,000
.12	Improvements				2,013,000
	Subtotal				$12,984,100
.13	Contingencies @ 20%				2,595,900
.14	Resettlement				1,000,000
.15	Administrative				1,750,000
	Total for lands and damages				$18,330,000
02.	**Relocations**				
.01	Natchez Trace Parkway		job		4,998,000
.02	County road bridge, Fannegusha Creek		job		350,000
.03	MS Highway 25 Bridge, Fannegusha Creek		job		950,000
.04	Utilities, pipelines		job		2,100,000
.05	Utilities, powerlines, & communications		job		384,000
.06	Contingencies @ 20%				1,756,000
	Total for relocations				$10,538,000

LETTER FROM ROBERT L. DESKINS, SOUTHEAST REGIONAL DIRECTOR, ENVIRONMENTAL PROTECTION AGENCY

JAN 14 1987

Colonel Pat M. Stevens, IV
Commander
Corps of Engineers District Office
Post Office Box 60
Vicksburg, Mississippi 39180-0060

Dear Colonel Stevens:

Legislation was recently passed authorizing construction of the Shoccoe Dam, and we understand that your office has responsibility for completing the General Design Memorandum (GDM). We are interested in working closely with you in mitigating adverse impacts to the Natchez Trace Parkway (NATR).

We understand that the Corps estimated $5,000,000 will be necessary to mitigate adverse impacts to NATR and that environmental studies indicate 4 miles of the parkway will need to be elevated above the 50-year floodplain. In our discussion with your office, we were pleased to learn that serious consideration is being given in advance planning to moving the right abutment of the dam to avoid the Cypress Swamp Interpretive Site. We also understand that it will be approximately 6 to 9 months, based on the GDM schedule, before coordination on these matters begins.

Based on our review of the environmental documents, and related legislative material, we believe the following points need to be resolved early in our coordination:

1. We believe that the Natchez Trace Parkway should be relocated to the west and raised to the crest elevation of the emergency spillway, elevation 327. Raising the parkway above the flood stage on its present alignment would not be as aesthetically pleasing and parklike as relocating the parkway to the west. Also, our preliminary estimates indicate that 10 or more miles of parkway motor road will have to be raised or relocated to be above the crest of the emergency spillway, elevation 327.

2. Hopefully, detailed site planning will be able to locate the dam structure outside the Cypress Swamp Interpretive Site since we do not believe there is adequate mitigation available for the loss of this site. In this regard, we need to carefully evaluate the dam location and any impacts on parkway resources.

3. We need to reevaluate the costs since the estimated $5,000,000 is insufficient to cover mitigation costs.

We look forward to coordinating with you at the earliest practical time in the GDM process.

Sincerely,

(Sgd) Robert L. Deskins

Regional Director
Southeast Region

LETTER FROM AVERY S. SMITH, DISTRICT ENGINEER

February 25, 1986

Senator Bob Montgomery
P. O. Box 284
Canton, MS 39046

Dear Senator Montgomery:

This is in response to Mrs. Evelyn Garner's call concerning my letter answering the questions about the affect of the proposed Shoccoe Dam on S.R. 25. The length of S.R. 25 affected is 1.6 miles between Station 1350+00 and 1435+00 at Fannegusha Creek, and referenced by Highway Project BP-0056-1(18).

The embankment or roadbed will have to be raised from elevation 313.51 to 322.00, and the bridge from elevation 319.50 to 326.53. The estimated cost for removing and reconstructing the existing 2 lanes and bridge at the higher elevations will be $2,200,000.00. The estimated additional cost for constructing the 2 new lanes and bridge at the higher elevations will be $543,000.00. ←

The cost estimate submitted is based on current prices and design quantities recommended by the Highway Department's Roadway Design Division.

Our Design people do not recommend any change in S.R. 25 at Coffee Bogue, because existing roadbed is at elevation 327.43.

Hopefully, this will give you the desired information on affecting S.R. 25 by Shoccoe Dam.

If we can be of further assistance, please advise.

Very truly yours,

Avery Smith
AVERY S. SMITH
DISTRICT ENGINEER

AS:js

cc: Mr. J. D. Quin, Chief Engineer
Mr. Glenn Calloway, Chief Engineer - Planning & Design
Mr. Wilmer James, District Construction Engineer
Mr. James C. Parker, Pearl River Basin Development District

[Carthage, Leake County, Miss., Thursday, March 29, 1984]

Shoccoe Petitions Draw Response From Congress

Petitions voicing opposition to Shoccoe Dam have reached Washington [illegible] delegation have expressed appreciation to the thousands of people who showed their interest and concern regarding the controversial dry dam and said they share the petitioners' views that a comprehensive flood prevention plan is needed to protect all potential victims in the Pearl River Basin.

Franklin

"I have said from the beginning that any flood control plan for the Pearl River has to take the interests of Leake, Attala and the other surrounding counties more carefully into consideration," Rep. Webb Franklin said.

"It is obvious from the mail I've received that the people in these counties feel the same way I do."

Franklin and other [illegible] petitions from over 7,000 residents from a six-county area along the Pearl River Basin. The petitioners wrote in opposition to the flood control dam which has been proposed for construction near the Madison-Leake-Scott County line.

"I hope that the concerns of the more than 7,000 persons who have signed these petitions will be taken into consideration by those who are presently planning a flood water retention structure to protect the city of Jackson," Franklin added.

Senator Thad Cochran wrote:

"Thank you for providing me with the petitions signed by persons opposed to the construction of the Shoccoe Dam. I am glad to have also the photographs showing the flooding in your area in 1979 and 1983.

"I certainly appreciate the concerns and interests of the thousands of citizens in Leake and surrounding counties and share your view that a comprehensive flood prevention plan is needed to protect all potential victims of flooding in the Pearl River Basin.

"As a Senator representing the entire State, I feel it is incumbent on me to consider carefully all the ramifications of any proposed solution to flood problems in the Basin, so the best interests of all concerned are served. I will continue to follow this approach, and I hope that we will soon see a comprehensive solution to Pearl River flooding that will be fair to everyone.

"Thanks again for writing.

Sincerely, Thad"

Stennis

Senator John Stennis phoned Tuesday to acknowledge receipt of the petitions. The senator said that he will send a letter in the near future. The Carthaginian will publish the letter as soon as it arrives.

Montgomery

Third District Congressman G. V. "Sonny" Montgomery wrote:

"Thank you for sending the tremendous number of petitions signed by people living in the area of the upper reaches of the Pearl River. Many of these people had already written me personal letters, so I was quite well aware of the concerns of local residents.

"You might be interested to know that I met personally with B. G. Bay from the Atlanta Division Office and Colonel Kelly from the Mobile District Office earlier this year to relay these concerns. I also strongly requested that flood protection for Carthage and Leake County be fully considered in the ongoing studies involving flood control on the Pearl River. I have further discussed this matter with the reconnaissance study they are currently conducting in the Leake County area.

"The main point I have made in all my conversations with Corps officials is that flood control in all areas of the Pearl River must be taken into consideration and that flood prevention in one area should not adversely impact on people living in other areas of the Pearl River.

"Thank you again for sharing the concerns of so many people with me regarding the Shoccoe Dam.

"With warm personal regards, I am

Sincerely, Sonny."

BEST AVAILABLE COPY

[The Clarion-Ledger, February 13, 1987]

LAWRENCE COUNTY VETOES ROLE IN SHOCCOE DAM

By BEVERLY CANERDY
Clarion-Ledger Staff Writer

The Shoccoe dam flood control project — long opposed by some counties north of Jackson — has drawn formal opposition from south Mississippi residents.

Lawrence County supervisors have vetoed the Pearl River Basin Development District's participation in the Pearl River project. The county is among 15 in the development district.

Board of Supervisors President Edward Hedgepeth on Thursday confirmed the veto, but refused to comment on why the board opposes the project. Supervisor Richard L. "Bud" White also refused to comment on the veto. Other supervisors and the board's attorney could not be reached for comment.

The Lawrence County Press, in Thursday's edition, said board attorney Francis Vining expressed concern that there was nothing in legislation concerning the project to prevent Lawrence County from having to help pay for the dam in the future.

Vining also was concerned that charges for Shoccoe might show up in the county's annual payment to the district. The development district each year notifies each county of its annual payment.

The development district has approved a plan for Hinds and Rankin counties and their municipalities to pay for the local share of the project.

Mike Davis, development district executive director, said he went to Lawrence County on Feb. 6, following the Feb. 2 vote, and talked to supervisors about the veto.

"I tried to tell them . . . we were not going to be looking at them for any funds for the Shoccoe project at all," Davis said.

Lawrence County is the fourth development district member to veto the project. Supervisors of Leake, Neshoba and Scott counties joined together in 1984 to veto the district's participation in the $80.1 million Shoccoe project.

For Shoccoe to be built, a local agency must act as sponsor to provide the estimated $28.4 million in nonfederal funds and assume maintenance of the project when it is finished.

The Pearl River Basin Development District has that authority. But a 1984 state law gives boards of supervisors in any three of the district's counties the right to join together to veto district participation in a flood-control project.

Although a possible compromise on a dam in Neshoba County may lead to the withdrawal of the Leake and Neshoba county vetoes, the Lawrence County vote means Shoccoe opponents would need to find only one other member county to vote against the project to maintain the veto.

Madison County supervisors have passed a resolution opposing the project, but that county is not a member of the development district.

A bill to remove or alter the veto provision is still in committees in both houses of the Legislature.

Shoccoe, identified by the U.S. Army Corps of Engineers as the best solution to Jackson-area flooding, is envisioned as a three-mile earthen structure to be built on the river about 20 miles north of the Ross Barnett Reservoir dam.

Called a dry dam because it would only hold water in times of heavy rain, the project has drawn upstream opposition because residents living north of the project area maintain that water behind the dam will worsen their flooding problems. They also maintain that they will not be adequately compensated for land on which the dam is built and land that will be flooded by construction of the project.

[Jackson Daily News, Jackson, Miss., February 16, 1987]

CLINTON ALDERMEN WANT SHOCCOE TAX EXEMPTION

By WILLIAM RABB
JACKSON DAILY NEWS Staff Writer

Jacksonians should have known better than to build on the Pearl River flood plain, and Clinton homeowners shouldn't have to pay for the Shoccoe dam to protect them, the Clinton Board of Aldermen says.

The seven aldermen want the Hinds County Board of Supervisors and the Pearl River Basin Development District to exempt Clinton residents from being taxed for the $80.1 million dam.

"The Pearl River doesn't flood in Clinton; we would receive no direct benefit from Shoccoe. Why should we have to pay for it?" asked Sid Spiro, president of the Board of Aldermen, which voted unanimously last week to seek the tax exemption.

Only people who live or operate businesses in the flood plain should pay for a dam to control flooding, Spiro said.

"We have drainage and flash-flooding problems here, and Jackson doesn't pay for it. We don't ask them to," he said.

Clinton is the first Hinds or Rankin County municipality to buck the PRBDD's plan to let the two counties and their cities come up with about $24 million for the dam.

Hinds County and its cities would pay $18 million-plus, and Rankin County about $5.5 million. The federal government will pay the remainder of the bill.

"That's a shame. Clinton benefits from Jackson, and Hinds County does services for them," including street paving work, said George Smith, president of the Hinds County Board of Supervisors.

"They (Clinton officials) have to consider what it would do to development of this area if flooding continues," he said.

Smith and Hinds County Administrator Hugh Jack Stubbs doubt the county would, or even could, exempt a municipality's residents and businesses from property taxes.

"The concept of taxation is that everyone pays for things that benefit the general population," Stubbs said. "Those who benefit directly, as well as indirectly, pay for public projects."

"We're going to build Shoccoe. Period," Jackson Mayor Dale Danks Jr. said after learning of Clinton's reluctance to pay for it.

At the earliest, construction on the dam wouldn't start until the early 1990s, the U.S. Army Corps of Engineers estimates.

Supervisors in Leake, Scott, Neshoba and Madison counties have long argued that the dam to be located north of the Ross Barnett Reservoir will hurt their property owners as floodwaters back up instead of flowing south. Recently, supervisors in Lawrence County to the south joined the opposition because of the prospect of hefty tax increases.

Supervisors in Leake, Neshoba and Scott earlier vetoed the PRBDD from acting as local sponsor of the dam to oversee its construction and maintenance for the federal government. The 15-county PRBDD handles flood control and recreation on the river.

If the PRBDD does become sponsor, its bylaws contain no provision that would allow a municipality to escape from the taxes, said Stubbs, a member of the district board of directors.

Clinton, located west of Jackson, wasn't hurt by the massive flood of 1979 or another flood in 1983. "Suburbs around Jackson depend on the well-being and development of Jackson as much as residents here do," Danks said.

Thousands of Clinton residents work in Jackson, the mayor noted. "In order to attract jobs and industry, the main city in a metro area has to have a positive image," Danks said. "And a city that floods doesn't have a positive image."

Jackson and Hinds County officials estimate the dam that would save more than 3,000 Jackson homes and business from Pearl River flooding.

Hinds County Tax Collector Glynn Pepper said it would be difficult to estimate Clinton's share of taxes on Shoccoe funding until the final tab is known and the cost is divided.

PRBDD officials have yet to decide how the $18 million would be split between Jackson and Hinds County taxpayers.

The PRBDD originally wanted to assign a portion of the costs to flood-prone Marion County south of Jackson but decided against it after learning of possible opposition there.

Spiro said he reasons that if communities that would benefit directly are opposed to Shoccoe, communities that don't benefit should be allowed to escape tax increases.

"Clinton would be paying for improvements in their (Jackson residents') property values," he said. "Let them and the developers who built in the flood plain pay for the dam."

[The Clarion Ledger]

EXPERTS: DEVELOPMENT COULD WORSEN FLOODS

By BEVERLY CANERDY
Clarion-Ledger Staff Writer

Hundreds of thousands of cubic yards of dirt have been added to the floodplain of the Pearl River in Jackson, Flowood and surrounding areas since the devastating floods of April 1979 and May 1983.

Because every cubic yard of dirt added to a floodplain displaces 200 gallons of water in times of flooding, that dirt — though federally required to make new buildings safe from rising water — could mean frequent future flooding, engineers and consultants say.

And construction of the $80.1 million Shoccoe dry dam might not alleviate the problem.

"There can be no further encroachment on the floodplain or the floodway. We can't afford to displace any more water," said George Wynne, president of the Pearl River Basin Development District.

The floodway is the area through which river water flows, and the floodplain is the area into which water spreads in times of high water or a flood. Federal Emergency Management Agency standards require that the floodway be left open, but development of the floodplain is allowed under certain strictures.

Jackson and Flowood both enforce minimum federal standards requiring that the floors of new or substantially renovated structures in the floodplain be floodproofed or built safely above the level of a flood so massive it should occur only every 100 years, said William Massey of the agency's Atlanta regional office.

The elevation requirement is met by putting structures on stilts or filling beneath the building foundation. The latter method is most frequently used.

In a compromise between the interests of those who want to develop floodplains and those who might be adversely affected by the development, the agency's regulations for federal flood insurance are based "on the fact that building can occur in the 100-year floodplain as long as waters are not caused to rise more than one foot in a 100-year event," Massey said. The agency determines which land is in the floodway and the floodplain.

Pearl flood record

Major Pearl River floods and height river crested in Jackson where flood stage is 28 feet:

March 1902 — 37.5 feet
December 1961 — 37.2 feet
April 1979 — 43.25 feet
May 1983 — 39.6 feet

A single permit issued for a Flowood development along Lakeland Drive in 1983 stated that 250,000 cubic yards of fill would be used. At least 16 similar floodplain development permits have been issued in Flowood during the past four years. Some of the permits stated that no specific structure was planned at the time of the permit request. The smallest amount of fill listed on the permits was 2,000 cubic yards.

Jackson has issued at least 103 building permits for residential and commercial structures in the city's floodplain during the past three years. Records on floodplain permits were not kept separately before 1984. The city's list of building permits did not include the amounts of fill used.

Charles Moak, general manager of the Ross Barnett Reservoir, said that, "as a practical matter, the filling done to date is a fairly minor part of the floodplain volume, but where do you stop. . . ."

"If it's carried far enough, it'll have a definite impact on the height of a flood such as the 100-year flood," Moak said.

Rutherford H. Platt, a floodplain consultant and professor at University of Massachusetts at Amherst, visited Jackson twice after the 1979 flood. He says the floodplain should be left alone, although use as a recreational area or wildlife habitat could be considered.

The floodplain around Jackson "by its very nature is still a natural storage area, at least that part of it that's outside the levees, so it should be regarded that way and whatever's left of it should be left open for storage purposes," said Platt, director of the Land and Water Policy Center at the university.

In 1982, Platt published an article on the 1979 flood in the *Journal of the American Planning Association* which stated that "most of the structures damaged by the 1979 flood did not exist" in December 1961, when the Pearl River crested at 37.2 feet and forced about 1,200 people from their homes. The river's flood stage at Jackson is 28 feet.

The 1961 flood nearly equaled the flood of 1902, which was the flood of record before 1979, he said. In the Easter Flood of 1979, the river crested at 43.25 feet.

"The period between the (1961 and 1979) floods was characterized by massive public and private investment within and just outside the area flooded in the earlier event," Platt wrote in the 1982 article.

Roads and bridges were built that invited development. The trend for floodplain development has continued in the last seven years, with widespread construction in areas flooded in 1979 and 1983.

Horace Lester Jr., engineer for Flowood, said that "if all of the floodplain were filled and the floodway were left open, the studies that we use to enforce the floodplain ordinance tell us that the water would rise one foot higher than if you left all of the floodplain open."

As long as federal standards are met, developers are well within their rights in building in the floodplain, Massey said.

"I know we have a lot of people that drive down Lakeland and say, 'My God, water was out there in '79 and it's terrible,' " he said. "But the floodway is narrow there and that's the reason, and as long as they elevate those structures, they're meeting our requirements."

Filling causes constriction in a floodplain and forces floodwater into the river channel. "It (the channel) will be a little fuller and it will run a little faster," Massey said.

Larry Larson, executive director of the Association of State Floodplain Managers in Madison, Wis., said that encroachment in a floodplain "pinches" the area "so for water to pass it has to build a higher head (immediately) upstream to push the water through."

But, Larson said, "by allowing the rise and bending to that one segment for development, they're ignoring the fact that there's another group of people being damaged by it, and that is those people that are now going to be subject to increased flood elevations."

Still, Massey said, as long as structures are raised and the floodway elevation is not increased more that one foot, federal requirements are met. "The local government can certainly adopt more stringent requirements if they desire, but we can only enforce the minimum regulations."

Larson said about eight states have laws more restrictive than the federal laws allowing a flood level to rise one foot. Most of those states, he said, prohibit any development that would cause a rise in flood elevations. Wisconsin, he said, allows development that will cause higher elevations only after engineering studies show what property will be adversely affected and the owners of that property negotiate or give their approval for the development.

Flowood Mayor Chastaine Flynt, asked if stricter regulations had been considered in his town, said, "No, if we did, it would just about eliminate all development."

Flynt said the proposed Shoccoe dam "is the ultimate solution on the flood problem." He also said construction of the dam would help development in Flowood.

Shoccoe, authorized by Congress Oct. 17, is proposed as a three-mile earthen dam about 20 miles north of the Ross Barnett Reservoir dam. The $80.1 million dam would impound water only during times of heavy rain; the U.S. Army Corps of Engineers has said that the dam would reduce Jackson flood stages by 5.5 feet to 6.7 feet in a record flood such as that of 1979. Moak has said that combining Shoccoe with the limited floodwater storage capability of the Barnett Reservoir dam would reduce levels even further.

The proposal that more development will take place if Shoccoe is built draws protests from many fronts.

"I would also be strongly opposed to changing the floodplain as a consequence of building Shoccoe," said Wynne of the development district, which supports the dam. "I think the floodplain ought to be more closely guarded."

Platt said a levee system and channelization work completed in the area in the 1960s was touted, at that time, as the ultimate solution to flood problems in the Jackson area. But in 1979, the levee failed.

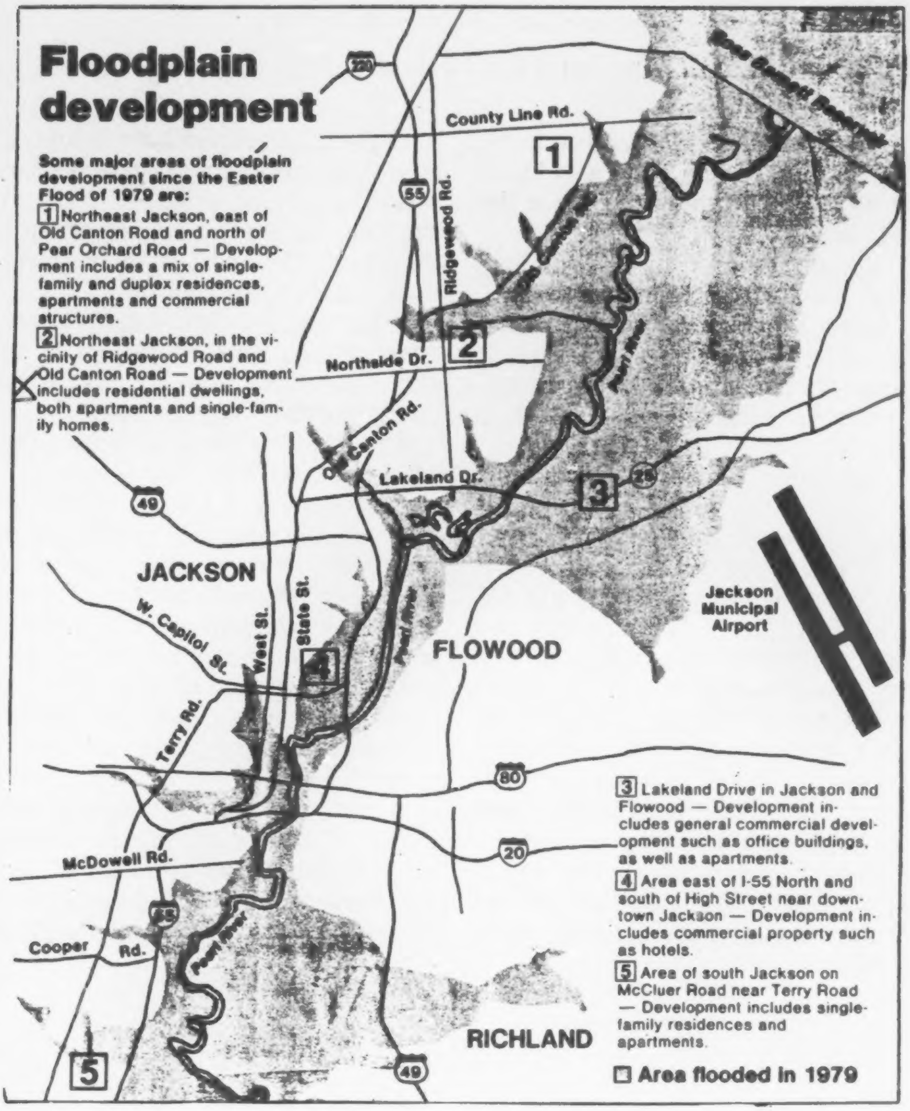
"We've found around the country that many times dams don't do the job they were supposed to," he said. The dams don't collapse, but the location and rate of rains and other factors can't be controlled, Platt said.

"Floods have a habit of outwitting structural solutions. It happens all over the country. I would think that whether the dam is built or not that they would want to retain the floodplain in open condition, maintain it in recreational land or wildlife habitat," Platt said. "It is repeating an old mistake to assume that an upstream dam is going to completely solve and completely protect downstream areas the way it is supposed to."

Jackson Mayor Dale Danks said that construction of Shoccoe may prompt a remapping of the floodplain and that the area the floodplain covers may decrease. If that happens, development that would have taken place in the floodplain anyway will technically take place outside the floodplain.

However, he said he is "hopeful that construction of Shoccoe will not give false hope."

Noting that Shoccoe was designed to help control the 1979 flood of record — and that even Shoccoe coupled with the Ross Barnett Reservoir will not be 100 percent effective against a flood such as that in 1979 — Danks said "you could have a worse flood of record beyond 1979, and so from the standard of giving false hope, that bothers me a little bit, in the event that there's a larger flood, of course."



Floodplain development

Some major areas of floodplain development since the Easter Flood of 1979 are:

1 Northeast Jackson, east of Old Canton Road and north of Pear Orchard Road — Development includes a mix of single-family and duplex residences, apartments and commercial structures.

2 Northeast Jackson, in the vicinity of Ridgewood Road and Old Canton Road — Development includes residential dwellings, both apartments and single-family homes.

3 Lakeland Drive in Jackson and Flowood — Development includes general commercial development such as office buildings, as well as apartments.

4 Area east of I-55 North and south of High Street near downtown Jackson — Development includes commercial property such as hotels.

5 Area of south Jackson on McCluer Road near Terry Road — Development includes single-family residences and apartments.

▨ **Area flooded in 1979**

220
Ross Barnett Reservoir
County Line Rd.
1
55
Ridgewood Rd.
Old Canton Rd.
2
Northside Dr.
Pearl River
Old Canton Rd.
Lakeland Dr.
3
25
49
JACKSON
W. Capitol St.
West St.
State St.
4
Pearl River
FLOWOOD
Jackson Municipal Airport
Terry Rd.
80
20
McDowell Rd.
55
Cooper Rd.
Pearl River
RICHLAND
49
5

[Jackson Daily News, December 21, 1986]

Floodplain—Uniform Development Regulations Needed

In 1979, the Easter Flood made the floodplain area on the Pearl River along Lakeland Drive truly look like lake land.

Yet, since then more new buildings have been built along the highway.

Pearl River flooding in 1979 and again in 1983 spurred officials to push for flood control measures, primarily for construction of the Shoccoe dam.

But there never has been a comprehensive approach to controlling development in the floodplain.

The facts pointed out in the report on Page One today are startling: Every cubic yard of fill dirt added to a floodplain displaces 200 gallons of potential floodwater.

The conclusion, according to officials, is that the flood level in the Jackson area will be affected. Some say it could mean flooding despite the construction of the Shoccoe dam.

Federal flood insurance regulations require simply that a structure be raised above the 100-year flood level.

Eight other states have adopted strict regulations for development in a floodplain. One prohibits it unless engineering studies can determine the exact effect and other property owners give permission.

It is a touchy political issue. Local governments want development, so recommendations to strictly regulate it have been unsuccessful.

And, there actually is increasing pressure to develop flood areas.

However, the floodplain should be more closely guarded. As Bob Harper, chief of the U.S. Army Corps of Engineer's special studies section pointed out, the problem is that Jackson, Flowood, Pearl and other government entities all have authority to manage the Pearl River floodplain. The result has been haphazard development.

A joint board, or one agency, regional or statewide, should coordinate floodplain management.

Development should not be allowed if it simply worsens flooding elsewhere.

STATEMENT OF HOWARD AND EDNA M. IVY, JACKSON, MISS.

There have been many conflicting and misleading news reports released regarding the method of financing this project and below will be listed some of these for your consideration in making your judgment in undertaking to join with the City of Jackson in underwriting the 20% cost of this project.

1) Congress authorized, but has not funded, an amount of $80,100,000 with the provision that local financing would bear 20% of this cost. Mr. Michael Logue spokesman for the Corps of Engineers from Vicksburg said the "report is vague because 'until the dam is placed on the very inch on a piece of paper' land effects will fluctuate" (Source Clarion Ledger 2/27/87)
"In order for Corps projects to be built , they must produce benefits that are eqeual or greater than the costs of the project. Shoccoe's cost/benefit ratio is 1-1.1, meaning there is a $1.10 benefit for every dollar cost." "We use the same computing rationale on all the projects that we do", Logue said. (Source- Clarion-Ledger2/27/87)

2) 20% of $80,100,000 is $16,020,000 - Local financing required.

3) Mayor Danks is asking for Local Funding of from $26,000,000 to $28,000,000.
$26,000,000 - Would project the cost of the Shoccoe Project to be $130,000,000
27,000,000 - Would project the cost of the Shoccoe Project to be $135,000,000
28,000,000 - Would project the cost of the Shoccoe Project to be $140,000,000

None of the above would meet the Corps of Engineers of a Cost/Benefit factor of 1 to 1.

4) Representative Dick Hall had requested in his Bill to the Mississippi Legislature $40,000,000. This would have projected the Shoccoe Project to $200,000,000. The Mississippi Legislature very wisely rejected this proposal and would have possibly received the same treatment in the Senate.

5) When the PEARL RIVER RESERVOIR (later named Barnett Reservoir) was constructed and financed around 1960 the financing was arranged on the following basis:
Five (5) Counties: Hinds, Rankin, Madison, Leake and Scott - agreed to levy a Two (2) Mill Tax on all property in these counties and remit the money to the Pearl River Reservoir Board to retire the bonds.
In addition the City of Jackson agreed to pledge and pay to the Pearl River Reservoir Board an ANNUAL amount of $500,000 from its Water Department with with to retire the bonds. These amounts were to be paid until a sufficent amount had been paid into the Pearl River Reservoir Board to retire the entire issue of bonds.

In recent years it was discovered that sufficent funds had been paid to the Pearl River Reservoir Board with which to retire the entire issue of bonds; however, the funds had been and are still being used to construct streets, parks, drives, sewers, etc. around the lake for the benefit of the AFFLUENT families who have built and continue to build expensive homes around the lake. Due to some technical interpretation of the contract with the Counties and the City of Jackson this is still being used by the Reservoir Board to develop property that under other circumstances would be passed on the the home owner. In effect the Tax Payers of the five county area and the Water Customers of City of Jackson are subsidizing the life style of the AFFLUENT, reaching down to the hard core of poverty for the funds to support these people.

Now, along comes Mayor Danks and wants to obligate the Tax Payers of ALL of Hinds and Rankin Counties, including Clinton, which Mayor Danks says has nothing to do with his plans. The people of Clinton pay taxes just as the people of Jackson. This is a Two (2) Mill Tax Levy on ALL property located in HINDS and RANKIN Counties the Mayor is talking about obligating. In addition to this the GENEROUS Mayor wants the Water Customers of Jackson to continue making the $500,000 annual contribution to the SHOCCOE financing. This reaches the real hard core of people. We only recently had a substantial increase in the Water Bills here in Jackson. The $500,000 would have gone a long way toward averting this increase to build a new water treatment plant.

Let's take a look at who the SHOCCOE project would help if it works at all:

1) Wealthy Land Developers
2) Land Speculators who have purchased the Swamp Lands hoping the TAX PAYERS would come through and "bail" them out with a nice profit.
3) Since the Easter Flood of 1979 the City of Jackson has issued over 100 building permits in the FLOOD PLAIN area
4) The people who have built or purchased their homes in the Flood Plain area should have been advised by the Land Developers that it was subject to flooding when the rains came. If you will drive through the residential and commercial area where construction was made in the FLOOD PLAIN you will realize these are NOT POVETY STRICKEN FOLK. Evidentially they like to live in the Swamp or they would not have purchased their homes in the Swamp.

Due to the conflicting reports which have come out in the news media and the amount of money involved, it would seem only fair that the Tax Payers be given an opportunity to decide if they wish to continue the Two (2) Mill Tax Levy and the $500,000 Annual charge against the Department of Water and Sewer. THIS SHOULD BE PUT TO A VOTE AND LET THE TAX PAYER AND WATER USERS DECIDE THEIR FATE.

Mayor Danks seems to want to RUSH this through before the people are alerted to what is going on. We are talking about a lot of money on a controversal matter and this will extend on into the NEXT generation of Tax Payers if Mayor Danks has his way.

This matter needs some MATURE and SERIOUS consideration.

NEBRASKA WATER RESOURCE PROJECTS

STATEMENT OF HON. J. JAMES EXON, U.S. SENATOR FROM NEBRASKA

Senator HATFIELD. I am happy to call our colleague from Nebraska, the senior Senator from Nebraska, Senator Exon.

Senator EXON. Mr. Chairman, thank you very much. I am delighted to be here this morning to introduce some very prominent Nebraskans who have been working in the area you are discussing here this morning for a long, long time. So I would like to recognize at this time, from the Central Platte Natural Resources District, Ron Bishop; from the Upper Republican Natural Resources District, Steve Hanson; from the University of Nebraska, William Powers; and from the Farwell Irrigation District, Mr. Tom Knutson.

Senator HATFIELD. I have been advised that you will be the spokesman for the group. Is there agreement or is there someone else that would like to be called to testify? I have Ron Bishop, Steve Hanson, and William Powers. We will start with the Upper Republican Natural Resources District.

Senator EXON. Mr. Chairman, I am chairing the Strategic Subcommittee right across the way. I can't stay for the testimony because I have to go back. I would like to say that we feel your committee has been responsive to our interests in the past. We appreciate the consideration that you have given us. We are moving ahead aggressively, but conservatively, on the whole matter of water protection and development in Nebraska.

We realize that funds are limited because of the extreme budget crunch and Gramm-Rudman-Hollings and all these things, but I am sure that there are some individual cases here that you are going to hear from this morning and some very special cases, all who have been talking with me, and we will be visiting about it later.

But at this time, thank you for consideration and welcome to all you Nebraskans. We are delighted to have you here.

Senator HATFIELD. Senator, we will take very good care of these people. You have made your thoughts known in the past and your help has been very welcomed. We will particularly take up the Upper Republican District. [Laughter.]

Senator EXON. I am very fearful of that. [Laughter.]

PREPARED STATEMENT

Senator HATFIELD. I shall point out that Senator Karnes has submitted a statement supporting these projects which, without objection, I will make part of the record at this point.

[The statement follows:]

STATEMENT OF SENATOR KARNES OF NEBRASKA

Farwell Irrigation Unit

Mr. Chairman, I appreciate this opportunity to comment on the continued funding of the Farwell Unit which is located in Howard and Sherman counties in Nebraska. I was unable to provide comments during your official hearing and I apologize for any inconvenience this delay may have presented. Let me say that I look forward with great anticipation to working with the distinguished members of the Committee on this and other matters important to my state.

The Farwell Unit lies within the jurisdiction of the Farwell Irrigation District and the Loup Basin Reclamation District (The Districts). Since completion of the unit's main construction phase in 1966, the community surrounding the unit has enjoyed many benefits including a stablized and modestly prosperous economy. However, confidence in the project has slowly eroded as it has become increasingly evident that the unit's original drainage requirements were seriously underestimated.

As a result of the drainage miscalculation, The Districts have already been forced to obligate themselves to drainage contracts totaling more than $7.5 million over the original estimate. If left in its current state, the project could cost the districts untold amounts -- amounts they would certainly be unable to meet.

In late 1982, the Bureau of Reclamation (the Bureau) issued a report which suggested the problems of the Farwell Unit could be overcome with a combination of canal lining, buried laterals and subsurface drains. However, they estimated such an initiative to cost nearly $25 million. There is no doubt such an undertaking would be costly. However, were we to ignore the problem, we would face much higher costs as a result of declining land values, nonpayment of taxes and other related problems. Therefore, I am requesting that you join me and my Nebraska colleagues in making a commitment to resolving this issue. We believe the federal government should assist the Farwell Unit in meeting the $7.5 million drainage contract it has already entered into by enacting legislation to allow the Missouri Basin power revenues to be diverted to this effort. Further, we hope this plan can be used to cover the cost of implementing the modifications suggested in the Bureau's 1982 report. Finally, we hope you will support the Administration's request to appropriate $360,000 in construction funds to the Unit.

Thank you for your time and consideration.

Papillion Creek and Tributaries Project
Washington, Douglas, and Sarpy Counties in Nebraska

Mr. Chairman, I appreciate this opportunity to express my support for continued funding for the Papillion Creek and Tributaries Project which is located in Washington, Douglas, and Sarpy counties in Nebraska. I was unable to provide comments during your official hearing and I apologize for any inconvenience this delay may have presented. Let me say that I look forward with great anticipation to working with the distinguished members of the Committee on this and other matters important to my state.

The Papillion Creek and Tributaries Project lies within the jurisdiction of Nebraska's Papio Natural Resources District (Papio). Since the project's inception, Papio has actively worked with parties, affected by and concerned with the initiative, to develop a comprehensive plan which will meet the many needs of the region.

As you know, Congress originally authorized the development of 21 dams as part of this project. Five of these dams were constructed by the time controversy and litigation resulted in a hold being placed on further construction. In an effort to overcome this impass, representatives both in favor of and against the original proposal formed the Papio Watershed Coordinating Committee to develp an acceptable alternative to the 21 dam principle. Eventually the group was able to develop a workable and effective alternative. My colleagues in the House and Senate played an important role in persuading Congress to de-authorize the dams and accept the compromise which called for channelization that would be funded by Congress and the local area on a 75-25 ratio. I fully support the requests by the local sponsors for federal funding to implement the channelization approach, and I hope funds will be appropriated and made available for this purpose as quickly as possible.

The Administration has requested $2.5 million for the construction of recreation facilities at Dam Sites 18 and 20 and for the initial phase of construction of the structures at Dam Site 18.

I support this request. I also support the request by the local project sponsors to move the FRY 89 recreation funding request of $1 million forward one year to be added to the FY 88 appropriation. This would not increase the overall funding for the project, but would simply allow the project to proceed quickly to completion on Sites 18 and 20, now that all controversies concerning these two units have been resolved.

I appreciate your time and consideration of this matter.

North Loup Division, Pick-Sloan
Missouri Basin Program in Central Nebraska

Mr. Chairman, I appreciate this opportunity to express my support for continued funding for the North Loup Division Project which is located in Central Nebraska. I was unable to provide comments during your official hearing and I apologize for any inconvenience this delay may have presented. Let me say that I look forward with great anticipation to working with the distinguished members of the Committee on this and other matters important to my state.

The North Loup Division Project lies within the jurisdiction of the Twin Loups Reclamation District (Twin Loups). Since the project's inception, Twin Loups has actively worked with parties, affected by and concerned with the initiative, to develop a comprehensive plan which will meet the many needs of the region. These would include developing sources of irrigation water, drinking water, water for wildlife, fish and waterfoul usage and water for recreation. Other members of the Nebraska delegation have worked tirelessly throughout the past several years to see the North Loup effort continued.

In that connection, your subcommittee has supported funding for the project since its inception. As a result, today the North Loup Division Project is nearly 60% completed. It has already produced many of the benefits the community had hoped for.

My Nebraska colleagues and I appreciate the Administration's willingness to continue this worthy project by appropriating an additional $19.470 million for FY 1988 and we are hopeful your subcommittee will see fit to concur with this request. Also, I support the request of the local project sponsors for funding rights-of-way acquisition and construction for the Davis Creek Dam.

I appreciate your time and consideration of this matter.

Multiple Water Issues in Nebraska

Mr. Chairman, I appreciate this opportunity to make my views known regarding a number of water-related matters in Nebraska that I feel deserve strong positive consideration by the Senate as we construct the FY 1988 water appropriations legislation.

Let me begin by saying that I am very concerned about the portion of the Administration's budget proposal that deleted funding for many studies that have been underway, or nearly, so for some time. As a representative of a state whose economic viability is ultimately dependent on ample water supplies, I feel that a funding philosophy that seeks to finish construction on some projects at the expense of planning and feasibility studies for future projects may mortgage the future of people who may suffer water shortages in the years to come. I do not feel it is wise to depart from a course that calls for a steady program of water development over time. As you well know, many years pass between the inception of a water project and its completion. It is my feeling that we should continue to fund projects now in their early stages as well as those near completion to keep the country on this steady course.

In that regard, let me state my support for funding for a number of projects in Nebraska on which you have already received testimony from my constituents:

South Platte-Frenchmen Valley Project. Local sponsors have requested $60,000 to $125,000 to continue groundwater declines in Nebraska and Colorado.

Loup River Basin Study. The State of Nebraska has already committed well over $1 million in state funds for this study, and requests $100,000 in FY 1988 for the federal share to continue.

O'Neill Unit--Groundwater Recharge Study. This involves an exciting and revolutionary approach to lower-cost ways of providing water with fewer environmental impacts. The study could have impact beyond this individual project and could produce information helpful for other future projects. Sponsors are requesting $650,000 in FY 1988 to continue the federal share of the study.

Missouri National Recreation River. I support the local sponsors' request for federal operation and maintenance money to protect the bank stabilization structures already in place. Also, I feel that construction funding for the Recreation River, authorized as part of the National Park Service and existing as a federal asset in the Department of the Interior, should be funded in the Park Service portion of the Budget rather than the Corps of Engineers portion, and as such, should not be subject to Corps of Engineers cost sharing rules.

Bank Stabilization Demonstration Projects. Bank stabilization has been a priority goal in Lincoln County and other areas in Nebraska for several years now. I support local funding requests for federal assistance in developing means for dealing with this widespread and very destructive problem on many streams in our state.

Northern Great Plains Solute Movement Laboratory. The University of Nebraska proposes to take the lead in this study of groundwater quality problems. Groundwater quality will be a problem of major significance for years to come in Nebraska and throughout the nation. I believe a federal financial commitment to assist in the study is certainly appropriate and warranted.

Mr. Chairman, I look forward to working with you and the other distinguished members of the committee as we move forward on these issues. Thank you for your attention to these matters.

SOUTH PLATTE-FRENCHMAN VALLEY, NEBR.

STATEMENT OF STEVE HANSON, CHAIRMAN, UPPER REPUBLICAN NATURAL RESOURCES DISTRICT

Senator HATFIELD. Gentlemen, let's proceed, then, with Mr. Hanson. Again, I must caution all of you to please summarize and that this session is going to have to end at 11 or a little after in order to vote on the question of overriding the President's veto.

Mr. HANSON. Mr. Chairman, I am Steve Hanson, representing the South Platte-Frenchman project, four ground water districts in northeast Colorado: Marks Butte, Frenchman, Sandhills, and Central Yuma County.

This is a joint effort between Colorado and Nebraska to conduct a study, the purpose being to determine the feasibility to recharge the declining Ogallala Aquifer in northeast Colorado and southwest Nebraska; to supplement declining surface water inflow into Enders Reservoir; and to provide additional recreation. No additional irrigation dollars are to be proposed.

The Bureau of Reclamation has agreed to conduct a feasibility study which will determine the effects of water quality, water availablity, how it will affect endangered species, underground aquifer recharge, and to determine if it will supplement ground water.

The average inflow into Enders Reservoir was 50,050 acre-feet through 1941 to 1967. During the past 5 years, the water flow has been only 20,000 acre-feet. There has also been a decline in the ground water level in the Upper Republican District for the last 15 years. This is over 15 percent of the total saturated area.

The Upper Republican Natural Resources District initiated ground water control as soon as our state statute would let us. This control has created a hardship on our farmers, but over 95 percent of our irrigators have cooperated by using better conservation practices and crops that use less water.

The district regulations restrict the amount of ground water that can be used on each irrigated acre do show a decline of three-fourths of 1 percent of Enders Reservoir is threatening the existing wildlife and recreation facilities.

The Frenchman Valley and H&RW Irrigation Districts served by Enders Reservoir were able to deliver less than one-quarter of the requirement to grow corn this past year. The Colorado districts that are supporting this have adopted well spacing and other requirements which effectively set an acquifer life that has prohibited new irrigation development.

The Upper Republican Natural Resources District has a ground water quantitative study and information from this study and data we have used to limit the use of irrigated water. The district can set future allocations to slow the decline even more.

The decline that has occurred and is continuing to occur can only be stopped by an added supply of water. The quantitative study predicted that by 1995 inflow into Enders will be so low that there will not be any surface water available to irrigate.

The opportunity to slow the ground water declines and increases in the surface water supply to Enders is possible. However, its success hinges on the implementation of a water transfer project. We urgently need this project. The South Platte-Frenchman project was funded at $100,000 for fiscal year 1987.

Local sponsors have matched this with a 50-percent cost share and are obligated to match future funding according to the memorandum of understanding which was signed with the Bureau of Reclamation. We are here today requesting an appropriation in the amount of $125,000 for fiscal year 1988 for the South Platte-Frenchman project.

We appreciate the opportunity to present testimony, and if you have any questions, I would be happy to answer them.

Senator HATFIELD. Thank you very much, Mr. Hanson.

[The statement follows:]

STATEMENT OF STEVE HANSON, CHAIRMAN, SOUTH PLATTE-FRENCHMAN PROJECT

PROJECT:

South Platte - Frenchman.

SPONSOR:

Four Groundwater Districts in Northeast Colorado: Marks Butte, Frenchman, Sandhills and Central Yuma County; Southwest Nebraska Upper Republican Natural Resources District; the H & RW Irrigation and the Frenchman Cambridge Irrigation Districts.

Study to be completed by the Bureau of Reclamation.

FINANCES:

Fifty (50) percent - Federal Government.

Fifty (50) percent - Local Sponsors.

PURPOSE:

A. Feasibility Study to determine:

1. Water quality.
2. Water availability.
3. The effect on endangered species.
4. Underground aquifer recharge potential.
5. Supplement surface water in Enders Reservoir.
6. Develop cost estimates.
7. Define potential service area.

NEED FOR PROJECT:

1. Groundwater has declined over 30 feet in some areas.

2. Projections are that groundwater will decline over 60 feet in some areas by the year 2000.

3. Surface water inflow into Enders Reservoir has been depleted by over 60 percent.

4. The quantitative hydrogeology study of the area projections are that inflows into Enders Reservoir will be depleted to the point that by the mid 1990's there will be very limited surface water available for irrigation, wildlife and recreation. This is a Bureau of Reclamation project.

Mr. Chairman and Members of the Committee, I am Steve Hanson, Chairman of the South Platte-Frenchman Project.

The sponsors of this project are four Groundwater Districts in Northeast Colorado: Marks Butte, Frenchman, Sandhills and Central Yuma County, which is being represented today by Ben Saunders, Manager; and the Upper Republican Natural Resources District, the H & RW Irrigation District and the Frenchman Cambridge Irrigation District, all in Southwest Nebraska. With me, is Ron Milner, Manager of the Upper Republican Natural Resources District.

This is a joint effort between Colorado and Nebraska to conduct a study, the purpose being to determine the feasibility to recharge the declining Ogallala Aquifer in Northeast Colorado and Southwest Nebraska; supplement the declining surface water inflow into Enders Reservoir and provide additional recreation. No additional irrigated acres are proposed.

A preliminary study has been completed by the Bureau of Reclamation which indicates the possibility of a viable project.

The Bureau of Reclamation has agreed to conduct a feasibility study which will determine effects of water quality; water availability; how it will effect endangered species; underground aquifer recharge potential; and determine if it will supplement surface water into Enders Reservoir. The Memorandum Agreement with the Bureau outlines this study plan. (Page 35 in this written testimony).

The average rainfall is from 16 to 19 inches per year, but the average crop usable rainfall is only 8 to 10 inches during the growing season. The University of Nebraska Extension Service states that a corn crop requires from 24 to 26 inches. This means that it takes an additional 14 to 16 inches of water to grow a crop of irrigated corn.

The average annual inflow into Enders Reservoir was 58,050 acre feet from 1941 to 1967. The average inflow the past 5 years was only 20,000 acre feet.

There has been a decline in the groundwater level of over 33 feet in the Upper Republican Natural Resources District in the past 15 years. This is over 15 percent of the total saturated thickness of the aquifer.

The Upper Republican Natural Resources District initiated groundwater control as soon a state statue allowed the District to do so. The control has created a hardship on the irrigator, but over 95 percent of the irrigators have cooperated by using better conservation practices and growing crops that use less water.

The District regulations restrict the amount of groundwater that can be used on each irrigated acre and where township show a decline in the Aquifer of 3/4 of one percent or more per year, a well spacing requirement that does not allow a new irrigation well to be developed within 3300 feet of an existing irrigation well.

There were 28 townships in which this requirement was enforced. This number dropped to 2, but because of dry weather, 7 new townships were added this year. Two of the townships border the Frenchman River of which the surface water flows into the Enders Reservoir. One township encompasses the town of Grant, which threatens the future supply of groundwater for human consumption. The Ogallala Aquifer study predicts if the groundwater levels continue to decline at the present rate, by the year 2000 there will be 100,000 acres which will be forced to revert back to dryland farming.

The loss of irrigated acres would cause an economical hardship on Northeast Colorado and Southwest Nebraska and lost revenue for both states as well a the nation.

The depletion of Enders Reservoir is threatening the existing wildlife and recreational facilities.(Page 13 of this written testimony.)

The Frenchman Valley and H & RW Irrigation Districts served by Enders Reservoir were only able to deliver a six inch water supply to each irrigated acre in 1986 and 1987. This is less than 1/4 of the requirement to raise corn.

Colorado Districts have adopted well spacing and other requirements which set an aquifer life that has effectively prohibited new irrigation development.

The Upper Republican Natural Resources District has a groundwater quantitative study of the District and using the information from this study and the data we have of the actual water use on each irrigated acre and the groundwater declines that have occurred, the District can set future allocation to slow the decline even more but the decline that has occurred and is continuing to occur, can only be stopped by an added supply of water. The quantitative study predicted that by 1995 inflow into Enders Reservoir will be so low that there will not be any surface water available to irrigate the 20,000 acres in the current Bureau of Reclamation-Enders Reservoir Project. the opportunity to slow the groundwater declines and increase the surface water supply to Enders Reservoir is possible. However, its success hinges on the implementation of a water transfer project. Therefore we urgently need to continue this study to determine if this proposal is feasible.

The South Platte-Frenchman Project was funded $100,000 for the fiscal year, 1987. (Page 30 in this written testimony.) Local sponsors have matched this with 50 percent cost share and are obligated to continue to match future funding according to the Memorandum of Understanding with the Bureau of Reclamation agreed upon (see attached sheet, pages 22-24 in our written testimony.) We are here today requesting for an appropriation in the amount of $125,000 for the fiscal year 1988 for the South Platte-Frenchman Project.

We appreciate this opportunity to present this testimony and ask that this receive careful consideration.

If anyone has any questions, we will be happy to answer them. Thank you.

FARWELL IRRIGATION PROJECT, NEBRASKA

STATEMENT OF THOMAS KNUTSON, GENERAL MANAGER, FARWELL IRRIGATION DISTRICT

Senator HATFIELD. Mr. Knutson?

Mr. KNUTSON. Mr. Chairman, my name is Tom Knutson. I am general manager for the Farwell Irrigation District and the Loup Basin Reclamation District in Farwell, Nebr.

We are here today to request that you support President Reagan's request of $360,000 for our project for a rehabilitation and betterment program in the Farwell unit. This particular project was built during the late fifties and early sixties.

In 1966, the irrigation district and the reclamation district took over the operation of this project. We have run into a drainage problem and we had to sign additional contracts during the seventies totaling $7.5 million. We are, at present, paying back on those drainage contracts at a rate of $200,000 a year.

We have about $2.5 million left within that R&B program which we are continuing to use, and that is why the President has $360,000 in the budget. We feel, however, that it our situation is to look ahead, and the Bureau has indicated it may cost as much as $25 million to rebuild the project.

Subsequently, through the assistance of Representative Congresswoman Virginia Smith, she has suggested that we come back and get your assistance. We feel that probably, there might be merit to take a look at utilizing Missouri basin power revenues to pay for some additional drainage in this particular project. I think some precedence may have been set.

I believe that last year, Public Law 99–662 was passed. It was introduced and sponsored by former Senator Jim Abdnor from the state of South Dakota. We would request that you support such an effort in regard to our drainage problems. We are working with the Commissioner from the Bureau of Reclamation and with our congressional delegation to provide the means to try and help our situation. Thank you.

[The statements follow:]

STATEMENT OF THOMAS KNUTSON, GENERAL MANAGER, FARWELL IRRIGATION DISTRICT

Mr. Chairman and members of the Committee. My name is Tom Knutson and I am General Manager of the Farwell Irrigation District and The Loup Basin Reclamation District in Farwell, Nebraska. We are a project that is located in the central part of Nebraska in Howard and Sherman Counties and we provide water to approximately 450 water users who irrigate 50,051 acres.

The Farwell Unit was authorized as a part of the Missouri River Basin Project by the Flood Control Acts of 1944 and 1946. The project was reauthorized in 1956. Construction of the Unit was initiated in 1959 and completed during 1966. Irrigation water deliveries began in 1963 to about 11,000 acres and water was available to the remainder of the project by 1966. The operation of the project was turned over to the Districts in 1966.

The Farwell Irrigation Project has brought many benefits to the Howard and Sherman County area. We wish to thank the United States Congress for that opportunity, for their past support and hopefully their continued support.

The project, however, has had a negative impact which we will share with you. The ground-water level has experienced a continuous rise since the first application of irrigation water in 1963. Critical drainage problems began to evolve in 1969. Subsequently, a Bureau study was done in 1970 and it was determined that there would be a need to increase the drainage requirement obligation from $187,000 to $2.5 million. The District had been told and Bureau reports confirm this, that $187,000 would be needed for drainage in the Farwell Unit. However, in view of the critical situation, the District agreed to increase it's repayment obligation of $187,000 in late 1970 and requested their repayment contract be amended to provide an additional $2.5 million in February. 1974.

As time went on, the city of St. Paul, in Howard County, began to experience high ground-water problems and the District entered another $1 million Contract in August, 1979, to try and correct that problem. However, that was not adequate and more money was needed due to other high ground-water problems in the Farwell Unit so the District entered a $4 million Contract in December, 1981.

In addition, in the late 1970's the city of Loup City, in Sherman County, was experiencing high ground-water problems. In 1978 and 1979 the Bureau put in drains for the city of Loup City at a cost of $334,045. The Bureau, in this case, somehow absorbed the costs even though it was project related. However, the Districts have always wondered why they couldn't absorb the $1,387,086 cost associated with the St. Paul drain. Instead, the District is obligated to pay for it.

The depth to ground-water in the project area, prior to the project being built, ranged between 60 and 140 feet. By 1980, the ground-water level had risen within 10 feet of the ground surface on approximately 22,000 acres in the project area and within 20 feet of the surface on an additional 21,600 acres. Since 1980, the ground-water level has risen even more in some areas and has caused undue hardship to farmers, The Farwell Irrigation District and The Loup Basin Reclamation District. This information is found on page 9 of the Special Report Summary Farwell Unit Water Conservation Study, September, 1982, Department of the Interior.

In September, 1982, the Bureau completed a water conservation study on the Farwell Unit which was started in the late 1970's. The results of the study indicated that the high ground-water problems could be controlled with a combination of canal lining, buried laterals and subsurface drains at an estimated cost of approximately $25 million.

The Farwell Irrigation District and The Loup Basin Reclamation District, who are financially obligated to these debts and the operation of the project, feel they have no choice but to return to the United States Congress and ask for help.

The Boards feel that in view of the fact that the original estimates for drainage were $187,000 and in view of the fact that they have obligated themselves to $7.5 million for drainage and would need another $25 million according to the 1982 figures, in the Water Conservation Report, to rehabilitate the project, they feel relief is needed and they need your help.

When the project was reauthorized in 1956, the total construction cost was $30,534,000. The revised costs in December, 1961, according to a summary sheet prepared by the Bureau on the Farwell Unit, were $31,461,000. Of that cost, Missouri Basin Power Revenues (Pick-Sloan) were going to repay for $22,148,000 or 70.4% of the total cost. As of today, with the additional drainage, the total repayment for the project is $43,060,425, according to a November 17, 1986 letter from the Project Manager with the Bureau of Reclamation. The Districts are obligated to pay back 49.5% of that cost, or $21,322,181, while power revenues pick up the remainder.

You might ask what have we done to help ourselves. The Districts themselves have been very much involved in spending their money trying to rehabilitate the project. According to our financial records from 1980 to present, the Districts have spent a total of $1,043,355 trying to improve the project. A breakdown on those dollars are $847,187.00 on burying laterals and lining canals, $101,173.00 on consultant and engineering fees, and $94,955.00 on drainage contractors. In addition, the District has lowered the water base from 15 inches per acre to 12 inches per acre as well as implimenting other water conservation measures.

The Districts themselves have been sued because of the high ground-water problem. They have paid on claim in excess of $40,000 and another claim in excess of $20,000. The legal fees alone to assist the Districts in these lawsuits, through the years, have been $95,170. We still have one lawsuit pending while at least 6 other landowners have considered lawsuits against the Districts.

Since I became the General Manager in February, 1985, we have had over 20 farmers attend our Board meetings requesting help in regard to ground-water problems. I have discussed this problem over the phone with an additional 30 farmers or more during the past two years. Mr. Chairman and Members of the Committee this is a very critical problem for those people and our Districts.

A sister project that is presently under construction just 40 to 50 miles north of our project, has authorization for $5,420,000 for surface drainage and $16,440,000 for subsurface drainage for a total of $21,680,000. The repayments on that project total $259,290,000 according to a 1983 Summary Statistics Volume III Project Data, United States Department of Interior report. Power revenues are going to repay 89.2% of the costs on that project according to that report.

Mr. Chairman and Members of the Committee, we are here today to request that you support the President's request of $360,000 for the Farwell Unit. In addition, we are requesting that the United States Congress enact legislation allowing the Missouri Basin Power Revenues (Pick-Sloan) to pay for this additional drainage. We would request that this legislation allow for power revenues to pay for $7,313,000 which is over and above the $187,000 orginally agreed upon for drainage. We would ask that this legislation include language to allow power revenues to pay for the additional drainage needed and recommended in the 1982 Water Conservation Study prepared by the Department of Interior.

We feel that this legislation would allow the much needed relief in regard to water charges to the water-users and worries about lawsuits. Mr. Chairman and Members of the Committee, we thank you for this opportunity to present our situation to you. We strongly urge your support for this type of legislation and we are available to answer questions. Thank you.

STATEMENT OF FRANKLIN ROXMIAREK, FARWELL, NEB.

I urge your support for continued funding for drainage within the Farwell Unit and I urge your support for Congresswoman Virginia Smith's proposal to pass legislation which would allow Pick-Sloan power revenues to pay for drainage costs in the Farwell Unit in Nebraska.

I am Franklin Rozmiarek, R.R. 1, Box 71, Farwell, Nebraska 68838. I have lived on a farm five miles northwest of Farwell all my life and have farmed it the last twentynine years. It has been in the family one hundred years this year. This farm is located in the Farwell Unit and receives irrigation water from it. I have farmed here since the beginning of construction of the Farwell Unit till now.

Since the Farwell Unit was constructed until now, the water level, due to seepage from canals and laterals, has raised the water level fifty feet and more depending on the area. Turkey Creek, which was always a dry stream through my farm, has become a live stream within the last ten years. My best farm ground lays in this valley and has become very difficult to farm since the water level at times comes almost to the top. After a rain, it takes a very long time before the ground is dry enough to allow me to work it.

Due to the high water level, I can no longer use Anhydrous Ammonia fertilizer and have to use liquid nitrogen which almost doubles the cost of nitrogen for corn. Also, the saturated soil does not hold enough oxygen because the wet soil becomes compacted and is no longer porous to allow air to enter the soil. These conditions restrict plant growth and reduces yields at least a third on my farm. Harvesting in the fall is usually very difficult since the soil dries very slowly when you get a fall rain. You have to wait a long time and still fight muddy fields because the water can't soak away.

The Farwell Unit has put in some shallow drainage on my farm a year ago. It has helped some but since the seepage coming in is almost more than the drainage can handle it remains to be seen whether this will prove to be a solution to the problem.

Drainage projects such as this are more than a farmer, due to the poor farm economy, can afford. It is very expensive for the Farwell District since it is only a hit and miss project it does not really solve the real problem. The Farwell District really needs to get ample funds so they can get at the real source of the problem because at the present time they are falling behind on the seepage problem. All the drainage which has been done in the Farwell Unit has only been done on irrigated lands but ever increasing amount of other lands have become so wet that farming in the lowlands have become impossible. Some of these acres are developing into waste land at the present time.

It is my opinion that if something on a larger scale is not done in the near future a lot of good land that the farmers are very dependent on will become unfarmable and become a liability to the farmers who own this land. At the present time, I would have to say the Farwell District is losing ground in their attempt to solve the drainage problem.

I urge your support of Congresswoman Virginia Smith's proposal to use Pick-Sloan power revenues to give the Farwell Unit the resources it needs to really get at the source of the problem and attack it in a way that will help solve the problem before more acres are lost to the seepage problem.

STATEMENT OF ROBERT POLLARD, HOWARD COUNTY, NEB.

I urge your support for Congress Woman Virginia Smith's proposal to use Pick-Sloan power revenues to pay for drainage problems in the Farwell Unit in the State of Nebraska.

I am Robert Pollard former County Extension Agent for Howard County in Nebraska. I served in that capacity for 28 years (1949-1977) and observed many changes in the Agricultural economy during those years.

I saw the Farwell Irrigation Unit being built and I saw the numerous benefits that the project brought to the area.

The project stabilized the agricultural economy and provided many opportunities to the people in the area. However in the last 15 years it has brought a lot of concern due to drainage problems.

I beleive technology and engineering may not have been as good back in those days in relation to the present time, and that may be a major reason why the Unit is having drainage problems today.

Having worked and lived with those farmers for 28 years I observed a lot of things, and I would like to share a few of those thoughts in regard to the drainage problem.

I had the opportunity to see and provide educational resource information and personnel from the University of Nebraska Extension Service and the United States Department of Agriculture on the development of the Sherman Dam and the Farwell Irrigation Project.

In those days agriculture crop and livestock production was the name of the game, and our goal was to teach the farmer how to change from dryland farming under all kinds of the "Northern Great Plains" weather conditions in drought, flood, hail or bountiful crop growing conditions.

It is hard to beleive what was accomplished by the foresight of the men who could vision the irrigated crops on "Canada Hill" and other land in Howard and Sherman counties.

The Bureau of Reclamation personnel was able to convert water from the Loup River via Sherman Dam through the hills and valleys to irrigate 50,051.0 acres of land that many soil specialists said was the best soil formation in the world.

Since the dedication of Sherman Dam we have seen the benefits of irrigation not only to the farm family but to all people living in the state, nation and world. However, we did not forsee the drainage problem causing much damage to land and property in the eastern or lower part of the irrigation project, prior to the excess water going back into the Loup rivers in the St. Paul community.

The final chapter of the success or failure of the Farwell Irrigation project can not be written until the drainage problem is solved.

I beleive if the irrigation project is to be a total success to all the people, it is necessary to provide money to continue the work on the water drainage problem in the Farwell Irrigation District.

STATEMENT OF JANET L. EDWARDS, ST. PAUL, NEBR.

Dear Chairman Johnston, my name is Janet Edwards. My interest in this cause is the result of working the past 12 years with area farmers, ranchers, city of St. Paul, and other affected persons in regard to the drainage and seepage problems of the Farwell irrigation project. I was the Howard County assessor from January 1975 until January 1987 and have dealt firsthand with these problems.

We have watched the underground seepage-drainage problem grow year after year due to the Farwell project. Some trouble spots have been addressed as they occurred, but not all users feel the corrective measures were equitable. We need a long-term, well-planned and funded program. The hit-and-miss method will only produce frustration and resentment among the property owners and problems for the district.

This water problem is causing our farmers to lose productive acres. Some pastures are so wet that no animals can be kept in them. In some cases, the wet acres are dividing a field or a pasture causing great difficulties in farming it or resulting in the loss of use. The assessors' office has put what at one time were prime crop acres to wasteland value because it is impassable with marsh grasses and reeds and has become a swamp.

This problem is of great importance and impact to our entire area. We are in the toughest economic times I have seen. Howard County has lost two banks and two credit unions since 1984. We are predominantly an agricultural based community. Our small towns, businesses, schools, and professional people are all feeling the impact of the economic times. Some of us will not survive them.

The Farwell Irrigation District has been a positive factor for the past 20-plus years. We are supportive of it as a community and an area. However, we cannot finance correcting the inherent design problems locally. Our farmers cannot stand a greater water assessment, the local tax levies are already prohibitive, and we have no other revenue source available locally.

I would strongly and sincerely urge you to support the legislation Congresswoman Virginia Smith is proposing, allowing Pick-Sloan power revenues to be used to finance the corrective drainage measures needed in the Farwell Irrigation District in Nebraska.

Thank you for your time and attention. Your support would be greatly appreciated.

STATEMENT OF JOHN SHOEMAKER, ST. PAUL, NEBR.

I am writing to you in support of legislation, being introduced by Representative Virginia Smith, that would allow Pick-Sloan moneys to be used to rectify a problem with the Bureau of Reclamation's Farwell irrigation project.

I am a resident of St. Paul, Howard County, Nebr., and operate an 800-acre crop and livestock farm, all of which is within the Farwell Irrigation District of the Loup Basin Reclamation District. For the past 23 years, the district has supplied area farmers with water for irrigation and the benefits of the project have been enormous. Our problem is this: Due to design flaws and/or miscalculations, a considerable portion of Howard County is becoming waterlogged, causing a loss of productive farmland and water seepage problems for residential and commercial properties. Apparently, the Bureau of Reclamation did not anticipate the large water loss due to infiltration from the extensive unlined canal system. Judging from the Bureau's earlier statements, I am sure they will deny this—denying responsibility is not unknown in bureaucratic circles.

My point is this: We bought this project, and are still paying for it, in good faith. Our irrigation district has spent a considerable amount of water users' and taxpayers' money to ameliorate this condition, but the scope of the work necessary to correct the problem is beyond the financial ability of the area to pay for it. My feeling is, that if the Bureau of Reclamation erred, they should be required to correct the problem.

I strongly urge that you support Congresswoman Virginia Smith's proposed legislation. Thank you for your time and attention.

STATEMENT OF JACK LANE, SUPERINTENDENT, FARWELL UNIT, FARWELL, NEBR.

Dear Mr. Chairman, my name is Jack Lane. I am unit superintendent for the Farwell Unit in Farwell, Nebr. I started my job in April 1965 and I am now in my last year and I have seen just about every imaginable problem the district could have.

I have traveled this project for 22 years and I have seen many farmers and heard many complaints in regard to the drainage of this project. In the early years the farmers and technology available to the district did not allow us to conserve water the way we wanted to, but that technology has changed drastically and today and in the last 12 years I feel we have done a good job serving the water users.

It has always been a mystery to me why the Bureau did not allow more drainage for this project. The water level in the creeks and the valleys that I have traveled for 22 years have continued to rise and I have often wondered when it might stop. The rise in these valleys and creeks is not due totally to farm runoff because those creeks and streams that were dry before the project are now live streams. I personally feel that seepage from the main canals is one of the main sources for this rise in the creeks and streams.

In addition, I personally feel that the rise in the ground water table in this area is due, to a large part, to seepage from the main canals and that highwater table feeds the creeks and streams.

If I could go back 22 years, knowing what I know today, I would strongly urge the Bureau to line all the main canals so that we could provide a solution to this critical seepage problem. I have never felt that it was up to the district to correct these problems because the Bureau told us years ago they would build us a project that works.

I strongly urge your support for Congresswoman Virginia Smith's proposal so that the people in this project can have an opportunity to get what they are paying for.

STATEMENT OF KEITH DAVIS, ST. PAUL, NEBR.

Dear Mr. Chairman, I am a retired general manager for the Farwell Irrigation District and am very familiar with the high ground water situation and have watched it grow year after year.

The repayment contract signed in 1954 allots $187,000 for the construction of additional drains. These funds were exhausted with construction of the first drain in 1972.

In 1966, which saw the beginning of the development period and the transfer of the facilities to the district for operation and maintenance, the board of directors was assured by the regional director of Region 7 that the district would receive a "project that works."

Since the first drain was constructed in 1972, the problem has continued to grow and the board of directors has made an honest, conscientious effort to correct the high ground water problem. These efforts include, but are not limited to, the construction of an extensive subsurface drainage system, placing laterals in pipe, installing lining in certain sections of canals, and reducing the original water allotment to water users.

As a result of the above efforts and expenditures, the board of directors has obligated the landowners in the project to repay an additional $7.5 million. The repayment of these funds has placed a very heavy load on the landowners in the project.

I wholeheartedly support the use of Missouri River basin power revenues to assist the board of directors make the project workable as was promised in 1966.

I respectfully request you and your committee to approve the use of Missouri River basin power revenue funds as requested by the board of directors of the Farwell Irrigation District.

STATEMENT OF THE NEBRASKA WATER RESOURCES ASSOCIATION

Since the mid-1960's when construction was completed on the Farwell Irrigation District and earlier than that with the Sargent Irrigation District, those projects have been operating to provide water for irrigation to their constituent farmers and ranchers. Since project completion, substantial ground water increases have occurred throughout the project areas and some areas have experienced significant seepage problems. The districts have already obligated themselves to $7.5 million in additional drainage contracts over and above the original repayment obligations for the area. The studies carried out by the Bureau of Reclamation estimate that additional funds will be necessary to satisfactorily rehabilitate the project.

With or without suggesting any blame for the problems which exist, it must be recognized that Farwell and Sargent both need substantial additional financial aid to resolve the ground water problems and that under no circumstances do the local farmers and ranchers have adequate means, nor should they be obligated, for completion of that entire program.

A comparison of total repayment obligations of several projects in the state of Nebraska and a comparison also of the portions repaid by irrigators and those portions repaid by power revenues under the Pick-Sloan program clearly show a wide disparity in proportions obligated for repayment from each source. Farwell and Sargent are by far the projects with the lowest commitment from power revenues at this time.

The Nebraska Water Resources Association feels that it is essential to the well-being of the project, its sponsors and the resident landowners and operators that the project be rehabilitated with all deliberate speed. We also believe that to accomplish that end, substantial rededication of power revenues is appropriate to that endeavor. We wholeheartedly support the request of the district sponsors.

STATEMENT OF LEONARD R. MOSTEK, CHAIRMAN OF THE BOARD, HOWARD COUNTY COMMISSIONERS, NEBRASKA

I am Leonard R. Mostek, chairman of the board of Howard County Commissioners. I urge your support for continued funding for drainage within the Farwell Unit and I urge your support for Congresswoman Virginia Smith's proposal to pass legislation which would allow Pick-Sloan power revenues to pay for drainage costs in the Farwell Unit in Nebraska.

I have worked for the Soil Conservation Service from 1947 to 1959 in Howard County. From 1959 to 1982 I had my own engineering and land improvement business. Since 1983, I have been a county commissioner. I have watched this project from planning stages into the final development. Now the problem is wetlands. One of my concerns is the farm economy in Howard County. I know the Farwell Unit cannot keep adjusting the water pricing criteria to overcome the cost of draining wetlands. With the difficult economic times, the Farwell Unit has limited funds and the farmers have none to invest in tiling or open drainage.

The next concern is loss of valuations. We have lost valuations on wetland, 56 miles of railroad, land valuations in Howard County in 1987 will be going down by $18 million, and the loss of revenue sharing and state revenues. In the last few years, we have been under pressure due to floods, tornadoes, and the closing of four banks in Howard County. Stop!

Getting back to the underground water and drainage problems that we are encountering in our Farwell Irrigation District, it has caused Howard County extra costs in areas to keep up the roads. Such as cleaning out ditches for drainage, cost of gravel, and mud rock for a good road base, et cetera.

I'm going to stop now and once again I urge you to support Congresswoman Virginia Smith on passing her proposal for revenues for the Farwell Unit.

STATEMENT OF DALE F. MATHINE, SOIL CONSERVATION SERVICE, ST. PAUL, NEBR.

I urge your support for continued funding for drainage within the Farwell Unit and I urge your support for Congresswoman Virginia Smith's proposal to pass legislation which would allow Pick-Sloan power revenues to help pay for drainage costs in the Farwell Unit in Nebraska.

I have worked for the Soil Conservation Service in Howard County, Nebr., for the past 13 years. Howard County includes about 90 percent of the Farwell Unit in Nebraska. There has been a gradual increase in the water table in the Farwell Unit ever since I have been here.

The increased water table has caused class 1 cropland to be taken out of production. This prime farmland taken out of production has caused an economic hardship on Howard County, Nebr. To help alleviate this situation, drainage is very important to this area. We need to get this prime farmland back into production.

STATEMENT OF S.J. EDWARDS, PRESIDENT, CITIZENS BANK & TRUST, ST. PAUL, NEBR.

I urge your support for continued funding for drainage within the Farwell Unit. Please support Congresswoman Virginia Smith's proposal to pass legislation which would allow Pick-Sloan power revenues to pay for drainage costs in the Farwell Unit in Nebraska.

This project of 50,051 acres with approximately 450 water users has developed severe drainage problems which has adversely affected some of our farm customers. I am the president of a $29 million rural bank located at the eastern end of this project and this irrigation system is a very important part of our economy.

Thank you for your consideration of our views on this issue of great importance to our community and to the customers of our bank.

PRAIRIE BEND UNIT, NEBR.

STATEMENT OF RON BISHOP, MANAGER, CENTRAL PLATTE NATURAL RESOURCES DISTRICT

Senator HATFIELD. Mr. Bishop?

Mr. BISHOP. Mr. Chairman, my name is Ron Bishop, and we certainly appreciate the opportunity to appear before your committee. I am general manager for the Central Platte Natural Resources District in south central Nebraska. It covers part or all of 10 counties along the 170-mile stretch of the Platte River running through that state.

I am appearing today as a spokesman not only for our natural resource district, but for a number of the cities, counties, counties' boards, and other organizations, including the Central Nebraska Conservation Association and the Twin Valley Conservation Association that are cosponsors of this project and numerous other organizations and businesses and individuals who strongly support the planning effort for the Prairie Bend project.

That project has an opportunity to be the true multipurpose water resource project that all interests in the water community have been contemplating for a number of years. The Platte River in Nebraska has been an area of national concern in recent times and most of the water controversies and conflicts within our state have centered around the Platte River.

It is now possible with the continued planning of the Prairie Bend unit that much of the controversy involving many of the parties can finally be resolved. As an example, a broad base of support for continuing the planning effort, you have already heard testimony from Mr. Michael Jess, I believe, yesterday afternoon, the director of the department of water resources speaking on behalf of the Governor and the state of Nebraska, and in the audience today are a number of individuals from various water interests across the state who have come the hearing, some of those people traveling through 40-mile-an-hour winter winds and 14 inches of snow that we had over the weekend back there in Nebraska.

But rather than to take the committee's valuable time with introductions of those people who are here to show support for continuing the Prairie Bend planning, I just ask them to raise their hands to give you some idea of the support that we have across the state of Nebraska for that Prairie Bend project.

Senator HATFIELD. Welcome to all of you.

Mr. BISHOP. I would like to briefly summarize the testimony that we turned in earlier by stating that we feel that to interrupt the planning process of this important project would be a disservice to the State, the sponsors and all those individuals and groups who invested up-front money in-kind services and considerable effort trying to resolve the conflicts and to develop a plan out there.

For those reasons, as well as the fact that I think it makes much more economical sense to have a continuity in the planning effort and the planning team, both economical sense for the federal dollar as well as the local and state dollars that have been put into this effort, we feel it is critical that $500,000 be included in the federal fiscal 1988 budget for advanced planning efforts by the Bureau of Reclamation for the Prairie Bend unit.

We would certainly like to request your assistance and your support in getting that accomplished. Thank you.

[The statements follow:]

STATEMENT OF RON BISHOP, GENERAL MANAGER, CENTRAL PLATTE NATURAL RESOURCES DISTRICT

REQUEST:	$500,000.00 for Fiscal 1988
FUNDING PURPOSE:	Advanced Planning by U.S. Bureau of Reclamation
PROJECT:	Prairie Bend Unit Water Resources Project
LOCATION:	Dawson, Buffalo and Hall Counties in Nebraska
PROJECT PURPOSE:	Irrigation, stabilization of ground water levels, enhancement of water quality, small community and rural domestic water supplies, fish and wildlife habitat, flood control, public outdoor recreation and other purposes determined to be appropriate.

My name is Ron Bishop and I am General Manager for the Central Platte Natural Resources District. Our Central Platte Natural Resources District covers part or all of the ten counties in south central Nebraska that encompass the Platte River and its drainage areas along a 175 mile stretch extending from Gothenburg, Nebraska on the west to Columbus, Nebraska on the east.

A number of serious problems and critical needs relating to water exist within our Natural Resources District area. The economy of the area and the well-being of the people residing therein is dependent upon irrigated agriculture with the primary source of irrigation water being ground water.

The ground water levels, however, have been declining, causing an increase in pumping costs and an accompanying reduction in well production. The current ground water level declines of up to 25 feet are predicted to increase over the next 20 to 35 years to the point where thousands of irrigated acres will revert to dry-land without some kind of a supplemental supply project.

Additionally, each and every one of the over one hundred thousand residents within our Natural Resources District gets their drinking water supply from ground water but ground water quality problems have developed in the eastern half of our District to the point where a number of municipalities have had to abandon wells because the nitrate levels exceeded the U.S. Public Health Service's published maximum safe level for human consumption.

The area is also subject to infrequent but severe flooding. The single flood event of June 1967 caused over $30,000,000.00 worth of damage in the eastern half of our Natural Resources District alone.

In addition to those three major problems there are also some needs related to water within our area.

First of all, there is a need to maintain adequate water supplies for the waterfowl, fish and wildlife that currently utilize the area. The Big Bend area of the Platte River Basin in Nebraska plays host to several million migratory waterfowl each and every year.

There is also a need within our area for water based recreation facilities for our residents and the other residents of central Nebraska.

Senator James Exon, the late Senator Edward Zorinsky, Congresswoman Virginia Smith and our Natural Resources District along with several other agencies, organizations, groups, associations and individuals have been working for a number of years toward getting a water resources project implemented in the area that would resolve those problems and address those needs.

Thanks to the foresight of this committee we were successful in getting the necessary authorization and funding to enable the U. S. Bureau of Reclamation to conduct a feasibility study on the project area and develop a plan to address the many problems.

To help reduce the Federal expenditure, our Central Platte Natural Resources District transferred $240,000.00 in cash to the Bureau of Reclamation for the feasibility study efforts. In addition to the cost-share funds, there has been an even larger amount provided in in-kind-services in the form of research, studies and data collection. These in-kind-services have been provided not only by our Natural Resources District and the local sponsors, but also by State of Nebraska agencies and other interested groups.

An example of the in-kind-services, research and studies that have been useful in developing the plan and conducting the feasibility study are the six items listed below that were conducted by our Natural Resources District:

(1) Water Quality Studies. The water quality studies and programs that have already been conducted will be beneficial to the planning of the water resources project as it relates to identification of water quality problem area, extent of the problem and effective methods of improving the ground water quality.

The local people, through our Central Platte Natural Resources District, have provided over $400,000.00 in cash toward those studies to date, in addition to the hundreds of man hours involved.

The additional funding by the State of Nebraska toward those studies has been approximately equal to the $400,000.00 local contribution.

(2) Ground Water Model. Our Central Platte Natural Resources District and the Lower Loup Natural Resources District, which borders us on the north, under contract with the U.S. Geological Survey, has developed a detailed ground water flow model of the ground water basin lying between the Loups and Platte River from the Lincoln-Dawson County line eastward, which encompasses the proposed project area.

The approximate cost of this ground water flow model is $120,000.00 with the cost being shared on a approximate 50-50 basis between U.S. Geological Survey and the districts.

The ground water model was available as a planning tool in evaluating the various alternatives available for the water resources project.

(3) Study of Engineering Alternatives. Our Natural Resources District contracted with the Denver, Colorado office of the engineering firm of CH2M Hill to look at various project

alternatives available to the local people. One set of alternatives the firm evaluated was the physical or engineering alternatives available to address the water supply needs of the project area.

(4) Study of Financial Options. Another set of alternatives evaluated by CH2M Hill firm were the options available to the local people for financing or assisting in the financing of the water resources program.

(5) Study of Institutional Options. The third set of alternatives evaluated by CH2M Hill for the District were the options available to the local people for establishing an organization to develop, manage and operate a water resources program.

The studies by the private firm of the engineering alternatives along with the study of the financial and institutional options was done under contract to, and paid for by, the Natural Resources District at a cost of approximately $35,000.00.

(6) Hydrologic and Water Resources Investigation. The engineering firm of Henningson, Durham and Richardson from Omaha, Nebraska conducted an investigation of the water availability in the Platte River and the preliminary water needs of the proposed project area. The investigation and studies by Henningson, Durham and Richardson were done under contract to, and paid for by, local interests at a cost of approximately $23,000.00.

All of the data from these studies and the other studies conducted by or with the assistance of other groups, has enabled the Bureau of Reclamation to progress to the point where they will complete the feasibility study this fall and be ready for advanced planning.

The Prairie Bend Unit will provide not only the means to resolve the water problems within the Prairie Bend area, but would also provide the means by which to resolve the minimum flows and environmental concerns on the river, and the water needs for the projects below.

A lack of federal funding for fiscal 1988 disrupts the entire process and it would prove to be economically inefficient. There is always a certain amount of lost time and effort whenever you start back up after a shutdown. That would occur without the advanced planning funds we are requesting. An equally serious result of a stop in the planning would be the loss of the planning team. With no funds for fiscal 1988, the planning team for the Bureau of Reclamation would be assigned to other jobs, most of which would be in other areas, and the experience, knowledge and background that they have developed on the project and the river would be lost. Such an approach would be inefficient use of time and of federal, state and our local funds.

For those and a number of other reasons, we feel it is critical that $500,000.00 be added to the federal fiscal 1988 budget for "advanced planning" efforts by the Bureau of Reclamation for the Prairie Bend Unit. We would like to request your support and assistance in getting that done.

We would hope that you would all lend your strong individual and committee support so that the Bureau of Reclamation can do the advanced planning on the Prairie Bend Unit that we so earnestly need.

Thank you.

STATEMENT OF RON HARGENS, CAIRO, NEBR.

I farm between Cairo and Wood River in the approximate center of the Prairie Bend area. I am 40 years old and have always lived in this area and have farmed for 22 years for myself.

In that time period I have seen the shallow wells go dry, being replaced by deep wells, tripling the horsepower requirements for irrigation water. On the land I farm there have been six irrigation wells abandoned for lack of production. Replacement wells were drilled at a greater depth to sustain irrigation.

According to the Bureau of Reclamation studies, and other studies done by private engineering firms, it is shown that in parts of the Prairie Bend area the aquifer life to sustain irrigation is 25 years or less.

In the same period the nitrate levels of some of our wells have increased to up to 30 parts per million. This is three times the level for quality standard safe drinking water.

To solve some of our problems, the Central Nebraska Conservation Association (Prairie Bend) was formed by a group of farmers and landowners from the Cairo, Wood River and Shelton area in western Hall and eastern Buffalo Counties in Nebraska. The purpose of the organization is to develop an irrigation and ground water recharge project to combat declining water tables and well production in much of the area.

To do this we filed a water right application in March of 1976 with the State of Nebraska to divert, store and use Platte River water. In October, 1976 we went to the Central Platte Natural Resources District, a local government subdivision, to ask them to assist us in securing a feasibility study. The Board of Directors unanimously decided to help us because of the existing and future water problems. Together we began seeking assistance from the Bureau of Reclamation to have them do a feasibility study of the area.

Our Nebraska delegation secured authorization and funding approval in both the House and the Senate for the feasibility study in 1983 and the study is now underway. The Central Platte Natural Resources District has budgeted $240,000.00 to help fund the feasibility study and additional financial support is being offered from the Central Nebraska Conservation Association.

The Bureau of Reclamation feasibility study, nearing completion, shows that there is a very valuable and feasible project to be developed in the area. The project would be mainly to stabilize stream flows in the Platte River for the endangered Whooping Crane, Bald Eagle, Least Terns and Piping Plover. It would also provide ground water recharge for the farm economy and tend to reduce nitrate levels of our drinking water.

The project is being supported by several area groups and organizations: the Hall County Board of Supervisors, Buffalo County Board of Supervisors, Kearney Chamber of Commerce, Grand Island Chamber of Commerce, City of Grand Island, the towns of Cairo, Shelton and Wood River, Central Platte Natural Resources District, Central Nebraska Conservation Association, and the Whooping Crane Habitat Maintenance Trust. The Central Platte NRD also conducted a public opinion poll by mail and of those who had an opinion, 85 percent were in favor.

With this amount of State and local support, and the existing and future water problems of water quality and supply, I feel it is of utmost importance that the feasibility study be continued. The project needs $500,000.00 to continue the progress of resolving our groundwater and wildlife problems.

Therefore, I am submitting this testimony to request your support of funding in order to continue the study for the Prairie Bend Project by the Bureau of Reclamation.

STATEMENT OF RODNEY K. GANGWISH, SHELTON, NEBR.

I would like to take this opportunity to submit written testimony in support of advanced planning funds for the Prairie Bend Unit being planned by the Bureau of Reclamation

I am a landowner and live two and a quarter miles south, and two and a quarter miles west of Shelton, Nebraska, within the boundaries of the proposed Prairie Bend Unit and am actively engaged in a farming partnership with my brother.

I wish to convey to you a growing concern on the part of myself and my neighbors about the future of irrigated agriculture in our area.

We have ground water declines of 15 to 25 feet in the area with a significant decrease in well production. In most areas of the northern part of the Prairie Bend Unit, the top water Pleistocene formation has been depleted. Some of these shallow wells in the northern reaches of the area that were yielding 700 to 800 gallons per minute 10 years ago and now yield less than 150 gallons per minute. These shallow wells have been replaced with deep wells drilled into the Ogallala aquifer. The problem is that in some areas the Ogallala formation either does not exist or is not that productive and is yielding only 400 gallons per minute.

The land we farm that lies close to the Platte River (within two to four miles) also has no deep water Ogallala aquifer. The wells on this land have decreased up to 25 percent in output over the last 15 to 20 years.

This trend is alarming to me, and when we take into account the projections of ground water models and studies, such as the Platte River Basin Level B Study conducted by the Missouri River Basin Commission, our future for sustained irrigated agriculture is in serious jeopardy.

In addition, there are water quality problems. All of the residents and towns in the area get their drinking water from ground water. Several communities have problems because their nitrate content is above the Public Health Service's recommended maximum. I had to replace my well a few years ago because it was yielding water with this same problem.

Flooding is another problem and, although not frequent, can cause a great deal of damage. There was in excess of $30,000,000.00 damage in the 1967 flood between Kearney and Columbus, much of which was in the proposed project area.

I feel the mood of the people in our rural area and in the surrounding communities of Grand Island and Kearney, have changed to the point that they are ready to face up to these challenges. We envision a project that would not only supplement irrigated water supply, stabilize ground water levels and enhance ground water quality, but would enhance municipal and rural domestic water supplies and provide fish and wildlife habitat, instream flows, public outdoor recreation and flood control. One or more of these facets of the project would appeal to every citizen of our area in addition to stabilizing the economy of irrigated agriculture.

These are some of the reasons for the strong base of support the project has throughout the valley.

As you can see, we are not talking about a single purpose irrigation project, but a multi-purpose water resources project that would address all of these needs and more.

My neighbors and I support this type of project which will meet our needs for our future in irrigated agriculture. If we do not have some solutions to our challenges, we will be faced with turning irrigated acres back to dry land.

We in the Prairie Bend Unit urge you to support $500,000.00 for advanced planning of the project.

STATEMENT OF THE HOWARD GREELEY RURAL PUBLIC POWER DISTRICT

As Manager of the Howard Greeley Rural Public Power District, I am writing this letter to voice the District's continued support for the North Loup Project. The Howard Greeley R.P.P.D. serves in both Howard and Greeley counties, which are in the North Loup Project area.

While the economic effects is seen throughout the construction area, we are sure the real impact of the Project will be felt throughout the entire Loup Valley upon the completion of the whole North Loup Project. After completion irrigation water will be delivered to approximately 53,000 acres in the Counties of Valley, Greeley, Howard, Merrick and Nance in Nebraska.

We who provide electrical service to this area of the North Loup Project are convinced that you and your Committee's continued support for the funding of the North Loup Project will provide a lasting economic benefit to central Nebraska and at the same time will provide many job opportunities.

So, we do want to take this opportunity to commend you and your Committee for the confidence you have placed in the North Loup Project to provide funds for the continued construction of the Project for the Fiscal Year 1988 in the sum of $19,470,000.00.

STATEMENT OF THE TWIN LOUPS IRRIGATION DISTRICT

As President of the Twin Loups Irrigation District I am happy to report that the North Loup Division of the Irrigation Project is 60% complete and that service is being made available to about 22,000 acres on the upper end this Summer.

This Project is now a reality, thanks to you and your committee for your past support. In order for the construction to continue, however, we need you and your Committee's support for the Fiscal Year 1988 appropriation in the sum of $19,470,000. In my opinion, it is of utmost importance that the construction of this project be accelerated so that the project can be completed as soon as possible. By doing this the people will be able to use the service provided and will begin paying back the government for the irrigation. We cannot make full payments toward the project until it is completed.

We have worked a number of years toward the making of this project and it is with a great deal of satisfaction that we will see the beginning of the benefits this year. Again, I do want to thank you and your Committee for your continued support of the North Loup Project.

STATEMENT OF NEBRASKA STATE SENATOR CARSON ROGERS

The North Loup Division Project is located in my legislative district giving me a first-hand opportunity to see the benefits of the project and talk with those the project will affect most.

The primary purpose of the North Loup Project is water conservation. This goal becomes increasingly important as we work to reverse the recent and alarming trend of decreasing water supplies. One of the added benefits of this project will be the recharge of groundwater supplies which complements the surface storage provided by the project.

The North Loup Project also provides needed jobs for workers from Nebraska and the surrounding states. This stimulates the local economy creating long-term economic benefits which include increased housing developments and new retail businesses. The recreational facilities which will become available through the North Loup Project are an added bonus for the area and have been part of the planning of the project since its inception.

Local and state support for the North Loup Division Project has continued to be strong. I would like to thank the Committee for the past appropriations for the project and ask that you support the recommended appropriation for fiscal year 1988.

STATEMENT OF DOUG THOMPSON, WOOD RIVER, NEBR.

I submit this testimony to the committee in regard to the funds for the preconstruction planning of the Prairie Bend Project. Your past decisions to initiate and continue to fund the study are greatly appreciated by the communities in the area. It would be a tragedy if the project were halted now, one year from completion, because the remaining $500,000.00 were not available.

Although the original project was conceived and promoted by irrigators in the area, Congress approved the initial study to encompass not only irrigation, but groundwater quality problems, domestic water supplies, flood control, outdoor recreation, and fish and wildlife habitat.

Since the project will withdraw a small portion of the flows from the Platte River in the "critical habitat" area of the endangered whooping crane (and several other "threatened species", a very disproportionate amount of the funds appropriated have been used by the Bureau of Reclamation for a thorough and complete study of optimum flows and roosting areas. Consequently, the Bureau's "preferred plan" (alternative 13) includes several large tracts on the Platte to be set aside and managed strictly for habitat of the endangered whooping crane.

We, the project proponents, feel this is appropriate and commend the Bureau for its efforts to make this project a totally new concept in that it would not only solve the water shortage problems of the area, but would also enhance the habitat of an endangered species.

Another new concept of the project is that it will supply irrigation water strictly through recharge of the aquifer, rather than conventional surface delivery. This plan is totally compatible since the area to be serviced is essentially all Class I prime farmland, already irrigated by groundwater pumps.

As a third generation farmer in western Hall County, I have witnessed (and been party to) the irrigation boom, which has turned a dryland, subsistent type economy into one of the most productive agricultural areas of the world. During this era, the farmers and businesses of the community have flourished because of two precious resources - our vast underground water and prime farmland. Unfortunately, I have also witnessed the decline of rural communities resulting from the current farm economic situation. The final and devastating blow will come if we lose our water supply. We farm in a semi-arid area; our prime land is of little value without water to make it flourish.

My pumping costs have already nearly tripled in the last twenty years, not withstanding pump replacement costs of $15,000 - $17,000 each. These pumping and replacement costs are again compounded in that the yield of the wells has steadily declined by 50 to 60 percent.

The future of my family and neighbors will hinge upon your decision. Please give it your utmost consideration.

STATEMENT OF THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT

I represent the Lower Platte North Natural Resources District, a downstream benefactor or downstream loser of planned and potential projects along the Platte River.

Our primary concerns in the lower reaches of the Platte River are twofold.

One - too much water during the spring snow melt period.
Two - too little water in the dry, irrigation months.

In the past our District has opposed all upstream projects; primarily because we felt we would lose the low flows.

We, however, feel that the studies to determine the habitat, both aquatic and terrestial, are extremely important portions of the Prairie Bend Project.

We also feel that if the Prairie Bend Project will assist in reducing high flows and providing low flows, as currently being planned, they can be extremely helpful in our lower platte area.

As such, I support the advanced planning funding for Fiscal 1988 that will allow us to continue to answer these important questions.

STATEMENT OF JUSTUS DOBESH, MAYOR, KEARNEY, NEBR.

The City of Kearney, Nebraska has a primary concern and interest in continued significant flows of the Platte River, especially due to recent construction and implementation of a water well field located on an island in the Platte River Basin. This well field serves the municipal needs of the City of Kearney and the City is truly dependent upon the flows of the Platte River to afford its citizens a safe drinking supply and an adequate source of water for all municipal needs.

The City is also confronted with problems concerning ground water pollutants, increasing nitrate buildups within the region, ground water declines, and increased demand for recreational water facilities. Because the City is tied to the fortunes of the agrarian development and industry around the City, any additional negative impacts suffered by agriculture, necessarily will have a critical and adverse impact upon the City of Kearney as well. The City believes that the Prairie Bend Project may provide solutions for many of these needs.

For these and many other reasons, the City of Kearney has continually supported the Prairie Bend Project. The City of Kearney believes it has secured important contract provisions with the Central Platte Natural Resources District to ensure protection of its water supplies as a result of the construction of the Prairie Bend unit.

The City of Kearney, does however, stand firmly and adamantly opposed to any project which involves a transbasin diversion of water from the Platte River basin.

STATEMENT OF NEBRASKA WATER RESOURCES ASSOCIATION

Since learning of the Administration's budget recommendations for Fiscal 1988 regarding the Interior Department and more particularly the Bureau of Reclamation, we have examined the proposals in some depth and conclude that the approach must be rejected.

While it is indeed pleasant to see Nebraska's construction funds concentrated toward completion of our newest project, we recognize that there are significant needs for construction funds in other project areas as well.

Even more critical is the complete elimination of general investigations and planning funds for the several project activities in Nebraska. The suggestion by Interior and the Administration that the postponement of such planning investigations is made upon projects having little chance to receive construction funding in the foreseeable future seems to be an inappropriate reason for curtailing these activities.

The process of water resources management and development is one of an ongoing nature continually needing input through planning if the ultimate reality of project development, upgrading and improvement are to be accomplished. To that end, it is important that general investigations and planning activities be continued. Each of the areas under current investigation by the Bureau of Reclamation in Nebraska need to be continued if Nebraska and its local water resources leaders are to in fact have the opportunities to make the decisions necessary for this state's resources future.

In particular, general investigations with regard to the Prairie Bend Unit are of critical importance. Prairie Bend, as the project is presently presented, has an opportunity to be the true multi-purpose water resources project that all interests in the water community have been contemplating for years. The project has had substantial local input through direct cash contributions and in-kind services provided by natural resources districts in the area along with other local sponsors, environmental organizations and the State of Nebraska. That local monetary commitment is, in itself, a measure of interest and enthusiasm for the planning process which is directed toward the development of a multi-purpose project.

The Platte River in Nebraska has been an area of national attention in recent times. Most of the water conflicts and controversies in the recent decade in Nebraska have centered around the Platte River. Finally, it is possible that through the continued planning of the Prairie Bend Unit much of that controversy involving many of the parties to the controversy can, for once, be resolved. To suggest then that part of the way through this comprehensive planning process punctuated by excellent conflict resolution conversations that the federal government completely eliminate further planning endeavors is a disservice to the commitment of the state and local people as well as to the concept of multi-purpose resources planning and development.

Nebraska's Water Resources Association therefore supports, at a minimum, the inclusion of the sum of $500,000 for advanced planning of the Prairie Bend Unit in Nebraska.

This Association would likewise request your support for those inclusions in the Fiscal 1988 budget for the Bureau of Reclamation and for the reassessment of the general direction proposed for further Bureau planning and construction efforts under the Administration's 1988 budget.

STATEMENT OF MARAVIN J. RICKERT, WOOD RIVER, NEBR.

I, Marvin Rickert, being a farmer who has lived in the Prairie Bend water project area my whole life and having farmed for nearly 30 years in this area, realize the water declines and the need of a water project.

I am asking for your support for the completion of the Prairie Bend Water Project.

I want to thank you for your support in the past and for your future support in solving our water problems.

STATEMENT OF KEITH G. STAFFORD, KEARNEY, NEBR.

As a member of the Twin Valley Conservation Association, as well as a farmer and businessman in Central Nebraska, I am writing to express my concern to your committee. It is my intention to inform you of the very serious need for appropriated funds for the continuance of the Prairie Bend Project on the Platte River in Central Nebraska.

My work brings me in contact with a great many people, both rural and urban, who are directly affected by the abundant quantity and quality of water resources made available by the great Platte River. I am firmly convinced that without continuation of the Prairie Bend Project, all the citizens of Nebraska in particular those in Central Nebraska, stand to lose the security for lifetimes to come of this precious resource which is passing unstructured through our midst.

This project is vital to the economy of Nebraska, both from an agricultural and industrial development base.

I strongly urge your committee to request $500,000.00 to be added to the federal fiscal 1988 budget for "advanced planning" efforts by the Bureau of Reclamation for the Prairie Bend unit. On behalf of all those folks that I represent in Central Nebraska, let me express our appreciation for any assistance that you provide to us in this extremely important matter.

STATEMENT OF LARRY AND ROSE MARY BRANNAGAN, WOOD RIVER, NEBR.

Larry and Rose Mary Brannagan, as owners of a grocery store (Mr. B's) in Wood River, Nebr., are in favor of continued progress on the Prairie Bend project.

As business people, this would help our economy in not only the business community, but our entire area.

We would appreciate this consideration in your decision.

STATEMENT OF LUTHER PETERS, NEBRASKA

Having been in business the past 30 years, I see the decline of the water table and the need for the Prairie Bend project. With our farm economy eroding, this project is even more necessary. Please act now as this will affect many people.

STATEMENT OF JAMES LANDELL, SHELTON, NEBR.

As a dealer of John Deere agricultural equipment in Shelton, Nebr., we would urge the committee to approve the funds necessary for the continuation of the Prairie Bend project.

Our business relies strictly upon the irrigated economy of western Hall and eastern Buffalo Counties. Should this economy revert to dry land, our business and the entire community will suffer greatly.

Please consider this in your decision.

STATEMENT OF M.A. FAIRBANKS, WOOD RIVER, NEBR.

I am M.A. Fairbanks of Wood River, Nebr. I am a landowner and I have lived here for 50 years. I have watched the water level decline during this time until it worries me. Without irrigation, we are helpless to raise a crop some years.

I have driven wells in this territory for years until the water level gets too low for a shallow well jet pump to work. So the people have had to go to deeper wells to get their water.

Any support for this project will be appreciated.

STATEMENT OF KEITH MCTAVISH, PRAIRIE BEND AREA, NEBR.

My brother and I are in partnership farming in the Prairie Bend area and we are concerned for the completion of the Prairie Bend water project. We thank you for your support in the past and would ask for your continued support so this project can be finished.

STATEMENT OF JOHN MARKUSSEN, WOOD RIVER, NEBR.

The city of Wood River, because of its nitrate problems and the increased awareness of the need for good water, realize the need for a water project. We are asking for your support for the completion of the Prairie Bend water project.

We want to thank you for your support in the past and for your future support in solving our water problems.

STATEMENT OF GARY BARG, WOOD RIVER, NEBR.

I, Gary Barg, am a local businessman at Wood River, Nebr. I have a fertilizer business that serves a lot of the farmers in the Prairie Bend water project area and I support this project to help protect the water needs for my customers, friends, and all others in this area.

Thank you for your support in the past, and we need your help now for the Prairie Bend water project.

STATEMENT OF RAYMOND APPEL, PRAIRIE BEND AREA, NEBR.

I, Raymond Appel, am a landowner in the Prairie Bend water project area and I know how important the water problem is in this area. This project is very important to me, as well as the economy for the surrounding towns.

Thank you for your support in the past and for your support now for this project.

STATEMENT OF RON BOCKSTADTER, WOOD RIVER, NEBR.

As an irrigated row crop farmer in the Platte River Valley, I strongly urge you to favorably consider all needed legislation for the Prairie Bend project. Though I am not a hydrologist, declining water levels and water quality of the Ogallala water basin need your immediate attention. The Prairie Bend project addresses both these major concerns in a manner both fiscally and ecologically sound.

Thank you for your time and consideration.

LETTER FROM CHARLES F. DUMMER, KEARNEY, NEBR.

FEBRUARY 19, 1987.

Mr. LAWRENCE RICHTER,
RR 3, Kearney, Nebr.

DEAR LAWRENCE: I understand that you will soon be traveling to Washington, DC, in an effort to secure continued funding for the Twin Valley water project. I am writing to you so that you may feel free to use this correspondence in your testimony.

To simply cease the study at this point would be a tragedy. Too much effort, time, and money have already been utilized to simply abandon what promises to be a viable project to save our water resources. Somehow, funding must continue until the project is completed. Then I will be willing to accept the final decision, but based upon facts. If we stop now, we'll never have those facts and an informed decision cannot be made. Water management in this area is at the crisis stage; it is not getting better and I have not seen an alternative presented that is better than the Twin Valley proposal.

I wish you success in your effort.

Sincerely,

CHARLES F. DUMMER, C.P.C.

STATEMENT OF RON COPE, KEARNEY, NEBR.

It is imperative that the Prairie Bend project in Nebraska be funded this year. Five years of hard work and approximately $2 million has already been spent. About $240,000 of this amount has been raised in this natural resources district with an additional $250,000 of in-kind services. We believe in Prairie Bend and put our money and our time where our mouth is.

The feasibility study is almost completed. The Bureau of Reclamation has been very cooperative and helpful in every way. This is the crucial time for Prairie Bend. If planning dollars are not funded this year to carry on the regular process of events, the Prairie Bend project could be doomed. You know and I know its twice as hard to get funding after the continuity is broken. The time is now!

The Prairie Bend project is vital to central Nebraska and the state of Nebraska as a whole. I know, I have lived here for almost 50 years. I'm a businessman and a farmer. I served on the original Natural Resources Board in this Central Platte Natural Resources District. I served 8 years in the Nebraska Legislature.

This is one of the greatest places in the world to live, but we do need help so that we can help ourselves. We don't want handouts! This is an investment for Nebraska and the United States.

Stabilization of the water level is the life blood of this area and the Prairie Bend project can go a long way to guarantee the continuance of one of the most productive areas in the United States for many years to come. Another high priority is the guarantee that Prairie Bend will do much toward water quality control. The increasing importance of wildlife and water fowl benefits will be greatly enhanced by Prairie Bend.

The Prairie Bend project is very, very important to the state of Nebraska. Please give a high priority towartd the allocation of funds for Prairie Bend.

STATEMENT OF CLYDE RIGGS, PRESIDENT, TWIN VALLEY CONSERVATION ASSOCIATION, NEBRASKA

I am very concerned about the federal government budget not including funding for continuing study on the Prairie Bend unit. This is a very important project in this state. I have been in this area for 41 years and watching the water table decline and crop production drop. As a result, pumping costs have increased for irrigation as all wells have been replaced with deeper wells, but that water table is now dropping. Alfalfa hay production in the area used to be 7 tons per acre without irrigation. Today the average production is under 3 tons per acre on the same land.

If there is no money available to proceed with the Prairie Bend unit, all the work, effort, and money put into this study will be lost.

If we do not get an appropriation for this in the 1988 budget, all will be lost and it will be a terrible blow to the farmers in this area who are only trying to mprove and preserve the land and water so important to this state.

STATEMENT OF LAWRENCE RICHTER, VICE CHAIRMAN, TWIN VALLEY CONSERVATION ASSOCIATION, NEBRASKA

We urge your support for funds of $500,000 to complete the planning and feasibility study of the Prairie Bend unit.

1. We have spent large sums of money on this project and a large amount of man-hours.
2. The U.S. Bureau of Reclamation has done a wonderful job of putting together a good sound project on the Platte River.
3. The Bureau and MRD and other groups has worked out a satisfactory water agreement with:
    a. Central Platte Natural Resources District.
    b. Twin Valley Conservation Association District.
    c. Upper Big Blue Natural Resources District.
    d. Central Nebraska Public Power and Irrigation Unit.
    e. Platte River Whooping Crane Maintenance Trust Unit.
    f. The Platte River Whooping Crane Central Habitat Maintenance Trust.
    g. The Federation of Parks and Game Commission.
    h. For the good of the future of the Platte River.
    i. The farmers of Nebraska, cities, and all people of Nebraska.

We urge you to support funding for 1988 to the Bureau of Reclamation for the completion of the planning and feasibility study of the Prairie Bend unit on the Platte River in Nebraska.

STATEMENT OF JIM DUBAS, GRAND ISLAND, NEBR.

As a businessman in central Nebraska I owe my existence to the great quality of our water resources. The most precious life-giving source is water and it has a much greater value than even oil. If it is not saved, recycled, and recharged, I fear Nebraska would become another desert. Please approve our natural resources districts' application for advanced funding of the U.S. Bureau of Reclamation Prairie Bend project. If the recharge system succeeds it will be a showcase for other possible projects and will insure our water quality and quantity for years to come in mid-America. This project has many years of work and study already completed and it would be a waste of effort if this is not continued and refunded.

STATEMENT OF VILLAGE OF ELM CREEK, NEBR.

We are writing and asking for your support and efforts in relation to the Prairie Bend project for the Central Platte Valley. Our town would be benefited by this project, as well as the adjacent areas. Since our location is along the Platte River and irrigation projects are conducive to this as a rural farming area, we are asking that the federal government's fiscal 1988 butget include funds to keep this project moving forward.

There has been progress by all agencies involved and tax dollars spent. Let's not throw this away. We, the village board of trustees of Elm Creek, will appreciate whatever can be done to keep the project viable and working.

Thank you.

STATEMENT OF ARLENE HOBAN, ELM CREEK, NEBR.

As a family that lives within a mile of the Platte River and income that is indirectly supported by farming, we are asking for your help in getting money reinstated in the federal government's 1988 budget for the Prairie Bend project. This project is extremely important for wildlife habitats and an abundance of water for our rural needs through this area of the Platte Valley.

We trust that you will give this project your support. We appreciate your time and effort on same.

Thank you.

NORTHERN GREAT PLAINS SOLUTE MOVEMENT LAB

Senator HATFIELD. Thank you very much, Mr. Bishop.

Mr. Powers?

Mr. POWERS. Yes; I am Bill Powers, director of the Water Resources Center, University of Nebraska. To my left is Dr. Roy Spaulding, a chemist who has come to the table in case you had technical questions.

I appreciate the time to talk to you today. Our request is for the Northern Great Plains Solute Movement Laboratory. As you recall from your high school chemistry, the solute is the chemical in the water solution, and in our case it is the contaminant in the ground water and the soil solution.

Right now, in the state of Nebraska, we apply about 30 million pounds of pesticides and about 1.7 billion pounds of fertilizers to the soil surface and some of these are beginning to appear in our ground water. Some of the state and federal agencies are now looking at protection strategies. One of these is a minimum or a maximum contamination level.

To be able to control these, we need to know how much material to put on the soil surface and how it moves through the soil and to the ground water. So we are requesting that we get a facility to study the fate and movement of these as they are added to the soil surface.

Our request is for about $4.5 million for the facility, which consists of two field sites, one on a clay soil and one on a sandy soil, and a research facility on campus.

The total cost of the facility and 5 years of operation would be about $12.5 million. We feel that this could be a regional facility and other states could join us in it. In the interest of time, I would like to conclude with that and say we appreciate the time to talk with you.

Senator HATFIELD. Thank you.

[The statement follows:]

STATEMENT OF DR. WILLIAM L. POWERS, DIRECTOR, WATER RESOURCES CENTER, UNIVERSITY OF NEBRASKA-LINCOLN

Thank you for alloting time for me to testify before the Subcommittee on Energy and Water Development, Senate Committee on Appropriations. This testimony is for support of a Northern Great Plains Solute Movement Laboratory needed to address groundwater quality problems beginning to concern the public. This proposal has the support of the University of Nebraska Board of Regents and the Nebraska Natural Resources Commission.

The use of agricultural chemicals in agricultural production has increased greatly during the past ten to fifteen years over the Northern Great Plains. In Nebraska alone some 30 million lbs. of pesticide and 1.7 billion lbs. of fertilizer are used annually. Several instances of nitrate contamination have been reported in Nebraska. Since 1978 herbicides have been detected in the groundwater.

Such reports of groundwater contamination have increased greatly over the past decade. This is partly due to more chemicals reaching the groundwater and partially due to better instrumentation that allows the measurement of chemicals in ever smaller amounts (parts per trillion in some instances). Nevertheless, the increasing number of contamination reports has created a concern for the health of those using groundwater as a source of drinking water.

As a result of this concern, the U.S. Environmental Protection Agency released a Groundwater Protection Strategy in 1984. The State of Nebraska also released a Nebraska Groundwater Quality Protection Strategy (one of the first in the nation) in February of 1985. Both of these strategies stress that remedial measures are extremely difficult and expensive. They stress pollutant source management and control as the most promising way of protecting groundwater.

In order to control (or manage) non-point sources of groundwater contamination, best management practices (BMP's) need to be developed and adopted. To develop BMP's, the fate and movement of chemicals (solutes) must be understood and predictable. This understanding and prediction capability can be accomplished through historical examination of past management practices and groundwater monitoring, development and calibration of simulation models, or controlled application coupled with extensive measurements. A combination of these is probably most desirable.

An interdisciplinary team of scientists having close access to a field research site and chemical analysis facilities is necessary to develop this understanding and prediction capability of the fate and movement of chemicals, i.e., a Solute Movement Laboratory needs to be established. The National Center for Groundwater Research (a consortium of universities in Texas and Oklahoma) partially serves this purpose for the Southern Great Plains region. However, no such facility exists for the Northern Great Plains area which differs in geology, climate, soils and agriculture practices from the southern region.

This is a proposal to establish a facility for the study of the fate and movement of chemicals through and below soils common to the Northern Great Plains region. Such a facility could be called a Solute Movement Laboratory and consists of a chemical analysis laboratory at the University of Nebraska in Lincoln with field laboratories in North Platte and Clay Center and perhaps in surrounding states of the Northern Great Plains. The whole system would be called the Great Plains Solute Movement Laboratory.

To study the fate and movement of chemicals in soils and aquifers, scientists would sample the soil solution and the aquifer below field laboratory sites to which the chemicals have been added. These field sites would be heavily instrumented and monitored. Because sophisticated instruments would be needed to analyze the samples for the array of chemicals being applied, they would be sent to the chemical analysis laboratory at the University of Nebraska in Lincoln. The anlysis laboratory would serve as the focal point and center of coordination for solute movement studies in the Northern Great Plains.

FIELD LABORATORY SITES

Facilities at North Platte and Clay Center are examples of typical field laboratories. Land owned by the University and cooperators will be available to be used as a field research site. The North Platte area has sandy soils typical of the Northern Great Plains region, while the Clay Center site has the heavier clay soils. The sites will be instrumented and operated so as to sample the soil, soil solution and groundwater. The field laboratory at Clay Center is now in operation as a result of a donation from the Burlington Northern Railroad Foundation. Limited support will be available for research at this site for the next two or three years. Additional support will be needed for more detailed studies. To support the research at other sites operated by the University and on surrounding farms, space for sample preparation, as well as office space for addtional professional staff, will be constructed near the headquarters of the West Central Research and Extension Center at North Platte.

Initially the hydrologic and chemical characteristics of the field sites will be determined. Some of the many models developed elsewhere to predict the fate and movement of the common agricultural chemicals will be calibrated for experimental site characteristics. The sites will be intensively instrumented. Soil and water will be sampled under various management systems. The samples will be analyzed at the University of Nebraska in Lincoln so that as chemicals are added to the soil their fate and movement can be traced as the water migrates to and through the groundwater.

Early research activity will be directed toward developing best management practices for an emerging technology called "chemigation", where chemicals are applied through an irrigation system. Irrigation sytems will be evaluated for their efficiency of application as well as devices for preventing direct spills down the well to the groundwater from a malfunction. The use and effectiveness of various chemicals and application rates for different cropping systems will be evaluated.

Past chemical application times and rates by cooperating private irrigators will be determined from their records. These will be compared with the analysis of soil and groundwater samples. This will provide an indication of the fate and movement of previously applied chemicals to supplement information to be obtained as controlled study sites become operational.

THE CHEMICAL ANALYSIS LABORATORY

The laboratory facility in Lincoln will house hydrologists, hydrochemists, chemists, hydrophysicists, soil scientists, weed scientists and entomologists, as well as support personnel (graduate students, electronic technician, glass blower, etc.) and their equipment. The building to house the laboratory should have the basics necessary for a 780 VAX computer room, sediment sorption labs, wet labs with purified water systems, GC mass spectroscopy lab, light gas isotope ratio lab (constant temperature), conference room, offices, electronic and glass blowing shop. Such instruments as a GC mass spectrometer, atomic adsorption unit, radium mass spectrometer are needed to analyze the samples from the field sites. Because of the great array of chemicals to be quantified and the sophisticated instruments needed, only one such centralized analytical laboratory is practical for the region. Presently many samples are sent outside the region for analysis.

ESTIMATED BUDGET

The cost of the centralized analytical laboratory (including the necessary instrumentation and lab equipment) is estimated to be $2,550,000 of which $250,000 is from non-federal sources.

The cost of the fully instrumented North Platte field site is estimated to be $1,718,300 of which $770,000 will be from non-federal sources. An additional $1,051,700 would be needed to expand the laboratory and office facilities at the West Central Nebraska Research and Extension Center headquarters at North Platte. Of this amount $300,000 would be from non-federal sources. An additional $500,000 of federal funds would be needed to fully instrument the Clay Center Field Site. The operation of the North Platte Field Site, the Clay Center field site and the Lincoln Analytical Laboratory would be funded from a combination of state, private and federal sources. Of the estimated $4,261,500 of state operating funds for the next five years, about $2,561,500 would be from redirection of existing funds. The remaining $1,700,000 will be sought from state appropriations as part of an accelerated hydrology program endorsed by a Board of Regents resolution (see attachment). Of the $2,585,000 in private funds, an estimated $1,410,000 is pledged including the land for the field site. The operating support from federal sources would be from such agencies as the U.S. Geological Survey, the U.S. Environmental Protection Agency and the National Science Foundation in the amount of about $1,150,000 in research grants over the next five years (this amount is typical of previous grants). The total cost of the Northern Great Plains Solute Movement Laboratory could increase depending upon the number of field laboratory sites established in surrounding states.

The above breakdown shows a cost share of a little over 54% by non-federal sources in the total cost of facilities and operation in Nebraska.

ADDITIONAL PREPARED STATEMENTS

Senator HATFIELD. Mr. Powers, the Prairie Bend planning money was eliminated from the budget and there is very strong support to restore the same levels for fiscal year 1987. I am deeply concerned about a number of matters that you touch on, all of you. I am introducing a bill that would require the affected states next door to potential nuclear waste disposal sites to have some voice in site selection. As a contiguous state, Oregon, which is next door to Hanford on the other side of the Columbia River, has a keen interest in this.

You are coming from an area which has the largest aquifer in the country and there is a Texas site that has been designated as a possible waste repository. I would imagine that you would urge your Representatives in the Congress of the United States to assist us, perhaps, in giving you a voice in the final site selection of much areas as an affected state. I wanted to lobby you now that you have lobbied me. [Laughter.]

Thank you very much, gentlemen, for your testimony. I appreciate it.

We have several other prepared statements from the Nebraska area that we hve received which should go into the record at this point.

[The statements follow:]

STATEMENT OF ALFRED DRAYTON, PRESIDENT, NORTH CENTRAL RECLAMATION DISTRICT IN NEBRASKA

I am Alfred Drayton, President of the North Central Reclamation District in Nebraska. Representatives of our district have had the pleasure of appearing before your Subcommittee on a great many occasions and we always appreciate the opportunity.

Just a bit of history about our project. The O'Neill Unit was authorized by the 83rd Congress in 1954 as a part of the Missouri River Basin Project. At that point the Norden Dam and Reservoir werekey coponents of the project.

Eighteen years later the O'Neill Unit was reauthorized by the Reclamation Project Reauthorization Act of 1972. The first advanced planning appropriation came in 1974. Soon after receiving advanced planning funds, a complaint was filed in U.S. District Court for the district of Nebraska alleging that the final environmental impact statement on the project was inadequate. Discussion continued on the environmental aspects of the project for the next seven years and by 1981 the Nebraska Congressional delegation requested an evaluation of alternatives to the authorized O'Neill Unit. This initial evaluation was carried out by the Bureau of Reclamation.

In 1983, the Nature Conservancy proposed a groundwater recharge alternative. As a follow-up to this alternative, federal funds were made available to the Nebraska Department of Water Resources to develop a state-led O'Neill Unit Alternative Study to review this proposal. This study was completed in January, 1985.

A federal task force immediately reviewed the results of the state-led study and completed their work in February of 1985. The task force concluded that "the general concepts presented in the state report are innovative and represent an exciting challenge to the federal, state, and local agencies in water-resources development." However, the Task Force also said that "The state report does not provide the data required to support a request for authorization and construction of the state alternative using federal funds."

Since February of 1985, we have been working toward securing information required to determine exactly how and where the project should be constructed. Funds have been appropriated each year for this activity, but quite frankly, our progress has been slow. There are several reasons. First, as project sponsors, it took us quite some time to deal with the impact of not building Norden Dam, but this is now behind us. Second, while the Bureau of Reclamation has had a contract with the United States Geologic Survey to provide additional data over the past two years, a concentrated study effort is now required and we hope that effort will get underway in the very near future. The Nebraska Natural Resources Commission has recently signed a Memorandum of Understanding with the Bureau of Reclamation to provide an estimated $149,500 of in-kind services for the study. Our North Central Reclamation District is also in a position to provide cash for items that are listed as the responsibility of the non-federal sponsors.

We do not want further postponement of the study as proposed in the Bureau budget. After coming this far and making changes n the project, we feel we now have a viable project. If part of the Bureau of Reclamation's planning staff is released, our final change for an O'Neill Unit Alternative may be lost. We feel a long-range plan for the future of our area is essential and should be completed.

In closing, I encourage your Subcommittee to redirect funds that may be necessary and provide adequate funding in the fiscal year 1988 budget for the Bureau of Reclamation to move ahead and complete a preconstruction plan on the O'Neill Unit.

Thank you again for the opportunity to appear before you.

STATEMENT OF NEBRASKA GAME AND PARKS COMMISSION

Enclosed is copy of a news article which appeared on the front page of the World-Herald on March 16, 1987. It concerns the proposed Calamus Reservoir Fish Hatchery located on the Calamus River immediately west of Burwell. In our opinion, the reporter, Fred Thomas, did a good job in presenting the proposal, including the financing.

Also enclosed is a Program Statement for the Calamus Reservoir Fish Hatchery which we submitted to our State Department of Administrative Services. This document will provide additional information on the project.

The Game and Parks Commission entered into an agreement with the Bureau of Reclamation for the enhancement of fish and wildlife at the Calamus Reservoir under the provisions of Public Law 89-72. This agreement included construction of a fish hatchery immediately below the dam and stocking of the reservoir with game fish. Public Law 89-72 provides authority for cost sharing of up to 75 percent with the State by the Bureau of Reclamation for enhancement of fish and wildlife resources associated with the project.

The State Legislature this year passed legislation to increase resident fishing licenses by two dollars. The two-dollar increase to the fishing permit is dedicated to construction, operation and maintenance of hatcheries, including the proposed Calamus Reservoir Fish Hatchery. This increase in fishing permits will provide a substantial part of the state's share of costs. We hope to have, in addition, some rather substantial donations from the private sector for the state's share of costs.

Planning and construction for the hatchery has been included in our state budget request for the biennium. The Governor approved the request in the budget proposal which she submitted to the Legislature. At this point, it appears that the Legislature will also approve the budget authority. We must now work for the appropriation of federal funds in a timely manner.

The budget submitted by the Administration for the Bureau of Reclamation for Fiscal Year 1988 included $300,000 for construction planning. Construction of the facility is scheduled for Fiscal Year 1989 and 1990 pending appropriation of funds. The amount of money included in budgets for these years is not known at present, but to complete the appropriation process for Fiscal Year 1990, the balance of $6,000,000 or $5,700,000, including both state and federal monies, would have to be appropriated. We would hope to have the project totally completed and ready for use by May 1 of 1991.

This project has received excellent state support, in our opinion, and people are expecting it to be built. We have also received the full cooperation and support of the Bureau of Reclamation for this project.

We will surely appreciate your assistance and support for the project during the appropriations process. Help us make the proposed Calamus Reservoir Fish Hatchery a reality for the people of Nebraska.

Should you have any questions, please feel free to contact us.

STATEMENT OF NEBRASKA STATE SENATOR STAN SCHELLPEPER

I would like to take this opportunity to express my position relative to the North Loup Division Project in Nebraska. My feeling is that the project is not only worthwhile but one that is necessary to maintain the agricultural economic level in the State of Nebraska.

The project is providing many jobs in the hard pressed construction industry as well as a boon to the economy of the local and state entities. In addition, I feel the greatest benefit of all will be the long term conservation of our water resources which our agricultural economy has and will have a continuing need for.

The economic and conservation benefits should impact not just the State of Nebraska but the nation as well. Therefore, I urge this committee to grant the request for continued funding for FY 1988. Thank you for your consideration.

STATEMENT OF STANLEY J. EDWARDS, ST. PAUL, NEBR.

As President of the Citizens Bank and Trust Company in St. Paul, St. Paul, Nebraska, I am writing this letter to encourage you and your Committee to continue support of the North Loup Irrigation Project and particularly, for your support of the appropriation of $19,470,000.00 for Fiscal Year 1988 in order that the construction of the North Loup Project can continue on schedule.

From the information I have received, the construction of the North Loup Project has been a great economic boost to not only the business people of Ord and Burwell, but to all the surrounding areas. Such economic boost has been the history of the development of the Farwell Project in our immediate trade territory.

While we realize in our area that the construction of the Project and its long term operation will first be felt in the immediate area of the Calamus Dam and Reservoir, we are confident that the same social and economic benefits we are enjoying as a result of the Farwell Project will enhance those same social and economic benefits in the North Loup Valley which is a part of our trade territory.

We are entering a new farming operation in our area. If we are to be successful in not only our agriculture pursuits but as well as our agribusiness, we must use our water resources to the optimum use in the conservation of our lands so that in future years, we can continue to be the breadbasket of the world.

Accordingly, it is my pleasure to heartily endorse the continued construction of the North Loup Project and I do wish to take this opportunity to urge you and your Committee to continue the funding for the continued construction of the North Loup Project for Fiscal Year 1988 in the sum of $19,470,000.00.

STATEMENT OF ST. PAUL AREA (NEBR.) CHAMBER OF COMMERCE

Dear Senator Johnston:

The St. Paul, Nebraska Area Chamber of Commerce continues to support the North Loup Irrigation Project.

The progress of the North Loup Project is very encouraging to the Members of the St. Paul Area Chamber of Commerce who recognize and know the tremendous benefits all of us have received by reason of the construction and operation of the Farwell Irrigation Project.

We understand the North Loup Project is over 56% complete. Accordingly, we want to take this opportunity to thank you and your Committee's past support of the North Loup Project and now for you and the Committee's continued support, all to the end that construction of the Davis Creek Reservoir, the Elba Canal and the Fullerton Canal can be initiated with the least amount of delay.

The St. Paul Area Chamber of Commerce continues to urge you and your Committee to act favorably on the appropriation of $19,470,000.00 for Fiscal Year 1988 in order that the construction of the North Loup Project can be continued uninterrupted.

STATEMENT OF ORVILLE JELINEK, MAYOR, ST. PAUL, NEBR.

Dear Senator Johnston:

As Mayor of the City of St. Paul, Nebraska, I am writing this letter to voice the City of St. Paul's support for the North Loup Project.

As a Neighbor City to Ord and Burwell, we can observe that the construction of the North Loup Project has been a great economic boost to not only the business people of Ord and Burwell, but to all the surrounding areas. As construction of the Davis Creek Reservoir, the Elba Canal and the Fullerton Canal is initiated, certainly St. Paul will feel that same economic impact.

The investment in the construction of the North Loup Project will be repaid, produce positive economic impact and conserve our natural water resources which are so important, not only to the State of Nebraska, but to the Nation as a whole. We as citizens of the City of St. Paul are looking to you for you and your Committee's continued support for the $19,470,000.00 appropriation for Fiscal Year 1988.

Again, we in St. Paul do want to take this opportunity to thank you and your Committee for your past support of the North Loup Project and your continued support of the North Loup Project, all to the end that construction of the North Loup Project can be completed with the least amount of delay.

STATEMENT OF ROY G. ARNOLD, VICE CHANCELLOR, UNIVERSITY OF NEBRASKA LINCOLN

Dear Senator Johnston:

I understand that your committee will soon be conducting hearings on the funding request for completion of the North Loup Project in Nebraska.

The development and wise use of the state's water resources are vital to the economic and social well-being of the people of Nebraska. We need to make effective and efficient use of both our surface and ground water resources in Nebraska. Our faculty in the Institute of Agriculture and Natural Resources presently have several research and extension projects in progress aimed at improving irrigation efficiency and water resources management. Currently, nearly six of every seven acres irrigated in Nebraska are dependent upon wells using ground water, with only one of every seven acres irrigated from surface water sources. Use of off-season high flows in our streams and rivers through water storage systems for irrigation, for ground water recharge, and for recreation and wildlife habitat improvement will be important to Nebraska's long term well being.

The University of Nebraska does not have an official position on this project. However, it would appear that completion of the remaining phases of the North Loup Project would enhance the further development of Nebraska's water resources and contribute to the state's economy.

STATEMENT OF ORD (NEBR.) CHAMBER OF COMMERCE

We wish to convey to you our support for the North Loup Project, which continues to boost our local economy and provide jobs for those who might otherwise be unemployed due to the sluggish economy.

We are very fortunate to have this project going at this time. Ord has been given an economic reprieve from the depressed economy when other areas have experienced reduced activity. I am pleased to report that new businesses continue to open in our area.

I am convinced that your and your Committee's continued support for the funding of the North Loup Project will provide tremendous long range economic benefits much greater than originally predicted, not only for Nebraska but for the entire nation.

Accordingly, I wish to take this opportunity to state that the Ord Chamber of Commerce urges your Committee's continued support of the appropriation of $19,470,000.00 for Fiscal Year 1988 in order that the construction of the North Loup Project can be completed on schedule.

We thank you and your Committee for this continued support and remain

STATEMENT OF NEBRASKA STATE SENATOR LEE RUPP

I am writing to ask for your support for the North Loup Division Project. The service the project will provide to portions of Nance County (which is in my legislative district, 22) is critically needed. The economical impact in this very depressed farm area will help stabilize the local economies.

As you are aware, the construction of the Project is well underway. When completed, it will provide a means for conserving Nebraska's natural resource, water. This comes at a time when Nebraska and surrounding states have become acutely aware of our water needs and the challenges of increasing demand and decreasing supply. The North Loup Project is needed.

I thank you for the past support that we have been given and urge favorable action on appropriations for the North Loup Project.

STATEMENT OF J. MARVIN WEEMS, ORD, NEBR.

We will greatly appreciate it if you and your committee will continue your support of the North Loup irrigation project and the appropriation of $19,470,000. for fiscal year 1988 so the construction on the North Loup project can be completed on schedule.

Even though we are not farmers, our clients are dependent on the farm economy and having a dependable, low-cost source of water.

Sound stewardship requires us to conserve and manage our resources, including, specifically, our water. The value of this appropriation exceeds the value of all others in terms of the good we can accomplish and the needs we can meet at home and abroad.

We are pleased you have chosen to carry this project out. Thank you.

STATEMENT OF J.A. WINSDALE, PALMER, NEBR.

I wish to personally thank you and your committee for the support you have given the North Loup project in the past. It is gratifying to see the progress that is being made.

As residents of the Loup Valley for over 100 years, our family is well aware of the importance of this development on the central Nebraska area. We are asking your committee's continued support in funding the $19,470,000 for fiscal year 1988 so this work may continue.

STATEMENT OF LARRY DURBIN, ST. PAUL, NEBR.

As manager of the Scoular Elevator located in St. Paul, Nebr., I am taking this opportunity to voice my support for the North Loup irrigation project. The economic effect to the area is of utmost importance, both in the area of agriculture and recreation.

We at the Scoular Elevator in St. Paul, therefore, ask for your support and the support of Congress and urge the appropriation for the fiscal year of 1988 in the amount of $19,470,000, so that the construction of the North Loup project can be continued.

I thank you for your continued support.

STATEMENT OF ROBERT E. WHITE, GENERAL MANAGER, LOUP POWER DISTRICT, NEBRASKA

The Loup River Public Power District earnestly supports the appropriation request for the North Loup Division project here in Nebraska.

We strongly advocate the continued development of our water resources in the state of Nebraska and recognize the importance of irrigation to our economy. The North Loup project will also establish a broader economic base in the project area.

We have worked closely with the Twin Loup Irrigation District and urgently request your favorable action on this appropriation.

STATEMENT OF DONALD J. MANKEE, GENERAL MANAGER, NORTH LOUP RIVER PUBLIC POWER AND IRRIGATION DISTRICT, NEBRASKA

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support, and now the committee's continuing support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for your continued support of the North Loup project.

STATEMENT OF NEBRASKA STATE SENATOR JAMES E. PAPPAS

I would like to take this opportunity to urge your committee to take favorable action on the 1988 fiscal year appropriation for the North Loup Division project scheduled for consideration later this month.

Water conservation is, of course, of critical importance to current and future generations. Projects such as the North Loup Division provide a means of halting the depletion of our water supplies, thereby helping to ensure that agricullturał states like Nebraska will continue to provide the food production upon which this country and the world depend.

Thank you for your consideration.

STATEMENT OF NEBRASKA STATE SENATOR M.L. DIERKS

I have been a longtime supporter of the North Loup conservation project. Though I am aware that competition for available funds is quite fierce, I do ask for your continued support of the North Loup project.

I cannot overemphasize the importance of responsible water management for current, as well as future residents. For this reason, I ask that your committee act favorably on the upcoming appropriation for the North Loup Division.

STATEMENT OF NEBRASKA STATE SENATOR JERRY D. MILLER

I would respectfully request continued support for the North Loup Division project.

As a farmer and an irrigator, I have a very deep concern for water conservation and water quality. I recognize the importance of water development projects for Nebraska.

Once again, the continued support for this project would be appreciated.

STATEMENT OF NEBRASKA STATE SENATOR ELROY M. HEFNER

I am writing to urge your support of the appropriation bill for the funding for the North Loup Division project in Nebraska. Thank you for your past support. I understand the hearing on this appropriation bill will be held in the near future and that the North Loup project will be funded at $19,470,000.

I am supporting the project and it has good local support. The Governor of Nebraska, along with the congressional delegation, is also supporting the project.

I would like to thank the committee for their past appropriations and your favorable consideration will be greatly appreciated.

STATEMENT OF DONALD E. BLAHA, ORD, NEBR.

We have experienced a large financial assistance in our depressed local economy due to the great Calamus Dam project. Our town has grown and prospered. I encourage you to support additional appropriations for this very worthwhile project.

STATEMENT OF DONALD E. KILDAY, PRESIDENT, TWIN LOUPS IRRIGATION DISTRICT, NEBRASKA

As president of the Twin Loups Irrigation District and a landowner in the Loup River Valley, I have been a staunch supporter of the project since its very beginning. With many farmers having financial difficulties because of the economy, I feel it is of the utmost importance to this area that this project be completed as soon as possible.

On behalf of the Twin Loups Irrigation District, I would like to thank you for past appropriations which has resulted in the completion of the Calamus Dam and Reservoir. However, the system which will be used to distribute the water to area farms, will need to be completed before the use of the water canbe made. I would urge that your committee give us continued support for the $19,470,000 for fiscal year 1988.

STATEMENT OF RONALD WOLF, GENERAL MANAGER, TWIN LOUPS RECLAMATION DISTRICT

I wish to take this opportunity to express to you and your committee my thanks for your faith in the North Loup project by your support for the continued funding of the project.

Having been born in an area with no irrigation and having witnessed the dramatic change after an irrigation project (the Sargent unit) was completed, I urge you to appropriate funds for the continued construction of the North Loup project.

Accelerated appropriations and construction of this project will provide immediate benefits, as jobs of any kind are very scarce in rural areas. The long-term stabilization of this area's agricultural economy is even more important both locally and for the whole region.

Again, I ask your support in continuing appropriations for the North Loup project.

STATEMENT OF DONALD E. HUGHES, PRESIDENT, TWIN LOUPS RECLAMATION DISTRICT

As president of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

I believe that it is critical to efficiently continue the construction of the North Loup Division. The Bureau's construction supervision staff is already in place. Dismantling this staff and reestablishing another construction supervision staff 1 or 2 years later cannot be cost effective. I ask your committee's support to push for an award of a construction contract for Davis Creek Dam in fiscal year 1988.

So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF HENRY G. LANGE, SECRETARY-TREASURER, TWIN LOUPS RECLAMATION DISTRICT

As secretary-treasurer of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

I believe that it is critical to efficiently continue the construction of the North Loup Division. The Bureau's construction supervision staff is already in place. Dismantling this staff and reestablishing another construction supervision staff 1 or 2 years later cannot be cost effective. I ask your committee's support to push for an award of a construction contract for Davis Creek Dam in fiscal year 1988.

So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF DONALD E. KILDAY, VICE PRESIDENT, TWIN LOUPS RECLAMATION DISTRICT

As vice president of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

I believe that it is critical to efficiently continue the construction of the North Loup Division. The Bureau's construction supervision staff is already in place. Dismantling this staff and reestablishing another construction supervision staff 1 or 2 years later cannot be cost effective. I ask your committee's support to push for an award of a construction contract for Davis Creek Dam in fiscal year 1988.

So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF MERVIN HORNICKEL, DIRECTOR, TWIN LOUPS RECLAMATION DISTRICT

As one of the directors of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

I believe that it is critical to efficiently continue the construction of the North Loup Division. The Bureau's construction supervision staff is already in place. Dismantling this staff and reestablishing another construction supervision staff 1 or 2 years later cannot be cost effective. I ask your committee's support to push for an award of a construction contract for Davis Creek Dam in fiscal year 1988.

So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF DEAN G. THEDE, DIRECTOR, TWIN LOUPS RECLAMATION DISTRICT

As one of the directors of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

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So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF RICHARD SPILINEK, DIRECTOR, TWIN LOUPS RECLAMATION DISTRICT

As one of the directors of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

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So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF CARL F. ANDERSON, DIRECTOR, TWIN LOUPS RECLAMATION DISTRICT

As one of the directors of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

I believe that it is critical to efficiently continue the construction of the North Loup Division. The Bureau's construction supervision staff is already in place. Dismantling this staff and reestablishing another construction supervision staff 1 or 2 years later cannot be cost effective. I ask your committee's support to push for an award of a construction contract for Davis Creek Dam in fiscal year 1988.

So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF JOHN POTRZEBA, DIRECTOR, TWIN LOUPS RECLAMATION DISTRICT

As one of the directors of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

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So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF ARTHUR L. RUSSELL, DIRECTOR, TWIN LOUPS RECLAMATION DISTRICT

As one of the directors of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

I believe that it is critical to efficiently continue the construction of the North Loup Division. The Bureau's construction supervision staff is already in place. Dismantling this staff and reestablishing another construction supervision staff 1 or 2 years later cannot be cost effective. I ask your committee's support to push for an award of a construction contract for Davis Creek Dam in fiscal year 1988.

So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF RAYMOND J. NOWAK, DIRECTOR, TWIN LOUPS RECLAMATION DISTRICT

As one of the directors of the Twin Loups Reclamation District, it is gratifying for me to observe the uninterrupted construction of the North Loup irrigation project.

Yet, I know it has been your committee which has annually supported and obtained the needed funds for the construction of the project.

I believe that it is critical to efficiently continue the construction of the North Loup Division. The Bureau's construction supervision staff is already in place. Dismantling this staff and reestablishing another construction supervision staff 1 or 2 years later cannot be cost effective. I ask your committee's support to push for an award of a construction contract for Davis Creek Dam in fiscal year 1988.

So, I want to take this means to again thank your committee for the continued funding of the North Loup project.

STATEMENT OF GEORGE CETAK, NEBRASKA

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

Although Calamus Dam is complete and the project is well over half done, much remains to be done. Another dam, Davis Creek, and the associated canals and laterals need to be built. The benefits which will accrue from the final construction of the North Loup project are manyfold. Even from a recreational point of view, this needed North Loup project will fill a great need for recreation in central Nebraska. The potential fishery, because of the high-quality water, has our expectations running high.

Again, I do want to take this means to thank your committee for your continued support of the North Loup project in fiscal year 1988 in the sum of $19,470,000.

STATEMENT OF HAROLD D. CHRISTENSEN, ORD, NEBR.

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

Although Calamus Dam is complete and the project is well over half done, much remains to be done. Another dam, Davis Creek, and the associated canals and laterals need to be built. The benefits which will accrue from the final construction of the North Loup project are manyfold. Even from a recreational point of view, this needed North Loup project will fill a great need for recreation in central Nebraska. The potential fishery, because of the high-quality water, has our expectations running high.

Again, I do want to take this means to thank your committee for your continued support of the North Loup project in fiscal year 1988 in the sum of $19,470,000.

STATEMENT OF HENRY ADAMS, ORD, NEBR.

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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STATEMENT OF TIM SONESON, ST. PAUL, NEBR.

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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Again, I do want to take this means to thank your committee for your continued support of the North Loup project in fiscal year 1988 in the sum of $19,470,000.

STATEMENT OF ZIGMONT PALACZ, ELBA, NEBR.

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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STATEMENT OF RANDY A. ADAMEK, NEBRASKA

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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STATEMENT OF DEWEY NEEL, NEBRASKA

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STATEMENT OF DAN M. VAN ZANDT, NEBRASKA

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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STATEMENT OF RICHARD L. FREEMAN, NEBRASKA

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As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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STATEMENT OF HAROLD R. BOYCE, NEBRASKA

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As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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Again, I do want to take this means to thank your committee for your continued support of the North Loup project in fiscal year 1988 in the sum of $19,470,000.

STATEMENT OF AMOS FIELDGROVE, ELBA, NEBR.

The North Loup project sponsored by the Twin Loups Reclamation District and the Twin Loups Irrigation District needs your continued support.

As an individual who enjoys outdoor recreation, hunting and fishing, I have watched the construction of Calamus Dam and Reservoir with much anticipation. The dam is complete and the reservoir is two-thirds full. Millions of fish have been stocked and many of us are looking forward to this summer's fishing. We are told it will be good this summer and that over the next 5 to 10 years it will be fantastic.

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Again, I do want to take this means to thank your committee for your continued support of the North Loup project in fiscal year 1988 in the sum of $19,470,000.

STATEMENT OF RANDY R. OTRANDER, NEBRASKA

I am writing to voice my support for the North Loup project. The immediate visible economic effects is seen all throughout the construction area which certainly is a tremendous boost for the local economy. The real impact is very hard to track in dollars and cents.

The equipment, fuel, supplies, materials, and so forth required in the construction of the North Loup project bring economic benefits to the area where such supplies originated. The North Loup project is a labor intensive project in relation to the total dollars spent. Labor dollars are, for the most part, spent in our local area, all of which contributes to a stabilized economy, not only in our area, but throughout the entire state of Nebraska and the nation as a whole.

I am convinced that your committee's continued support for the funding of the North Loup project will provide lasting economic benefits to central Nebraska and, at the same time, the North Loup project will provide job opportunities for people in many areas of the state of Nebraska and for the whole nation.

So, I wish to take this opportunity to state that all of us need your committee's continued support of the appropriation of $19,470,000 for fiscal year 1988.

STATEMENT OF PETE'S MARKET, ELBA, NEBR.

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STATEMENT OF DON ARNOLD, ORD, NEBR.

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STATEMENT OF JUDY PORTER, NEBRASKA

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STATEMENT OF MICHAEL G. POTTER, ELBA, NEBR.

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So, I wish to take this opportunity to state that all of us need your committee's continued support of the appropriation of $19,470,000 for fiscal year 1988.

STATEMENT OF RANDY L. JUZENSKI, ELBA, NEBR.

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STATEMENT OF ALFRED NOVATNY, ELBA, NEBR.

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I am convinced that your committee's continued support for the funding of the North Loup project will provide lasting economic benefits to central Nebraska and, at the same time, the North Loup project will provide job opportunities for people in many areas of the state of Nebraska and for the whole nation.

So, I wish to take this opportunity to state that all of us need your committee's continued support of the appropriation of $19,470,000 for fiscal year 1988.

STATEMENT OF DORIS ANDERSON, NEBRASKA

I am a farmer living in the North Loup Division area. This summer many of my fellow farmers in the Ord area are going to receive project water for the first time. As with me, I'm sure this has been their dream for many, many years.

Those of us in the project area where construction has not started are becoming concerned over the President's desire to delay the construction of this project. Our only recourse is to beg your committee's continued support for funding to complete this project. Our plea to complete this project, which is already about two-thirds complete, seems only logical.

With your committee's continued support of the appropriation of $19,470,000 for fiscal year 1988, I am confident that the North Loup project will be completed and my dream can become reality.

STATEMENT OF JOHN HERLIG, NEBRASKA

I am a farmer living in the North Loup Division area. This summer many of my fellow farmers in the Ord area are going to receive project water for the first time. As with me, I'm sure this has been their dream for many, many years.

Those of us in the project area where construction has not started are becoming concerned over the President's desire to delay the construction of this project. Our only recourse is to beg your committee's continued support for funding to complete this project. Our plea to complete this project, which is already about two-thirds complete, seems only logical.

With your committee's continued support of the appropriation of $19,470,000 for fiscal year 1988, I am confident that the North Loup project will be completed and my dream can become reality.

STATEMENT OF DALE RASMUSSEN, NEBRASKA

I am a farmer living in the North Loup Division area. This summer many of my fellow farmers in the Ord area are going to receive project water for the first time. As with me, I'm sure this has been their dream for many, many years.

Those of us in the project area where construction has not started are becoming concerned over the President's desire to delay the construction of this project. Our only recourse is to beg your committee's continued support for funding to complete this project. Our plea to complete this project, which is already about two-thirds complete, seems only logical.

With your committee's continued support of the appropriation of $19,470,000 for fiscal year 1988, I am confident that the North Loup project will be completed and my dream can become reality.

STATEMENT OF HARRY EDWARDS, NEBRASKA

I am a farmer living in the North Loup Division area. This summer many of my fellow farmers in the Ord area are going to receive project water for the first time. As with me, I'm sure this has been their dream for many, many years.

Those of us in the project area where construction has not started are becoming concerned over the President's desire to delay the construction of this project. Our only recourse is to beg your committee's continued support for funding to complete this project. Our plea to complete this project, which is already about two-thirds complete, seems only logical.

With your committee's continued support of the appropriation of $19,470,000 for fiscal year 1988, I am confident that the North Loup project will be completed and my dream can become reality.

STATEMENT OF HARRISON BECK, ORD, NEBR.

I am submitting this statement to encourage your committee to continue your support of the North Loup irrigation project and particularly for your support of the appropriation of $19,470,000 for fiscal year 1988 in order that the construction of the North Loup project can continue.

Although I will not receive any direct benefits myself, I believe the wise use of our greatest natural resource—water—is of great importance to all of us. Without the wise conservation of our natural resource—water—the future of the Loup Valley would be very uncertain. So, I wish to take this opportunity to state that all of us need your committee's continued support.

To be sure, I thank your committee for this continued support.

STATEMENT OF CLINTON WELLS, ELBA, NEBR.

I am submitting this statement to encourage your committee to continue your support of the North Loup irrigation project and particularly for your support of the appropriation of $19,470,000 for fiscal year 1988 in order that the construction of the North Loup project can continue.

Although I will not receive any direct benefits myself, I believe the wise use of our greatest natural resource—water—is of great importance to all of us. Without the wise conservation of our natural resource—water—the future of the Loup Valley would be very uncertain. So, I wish to take this opportunity to state that all of us need your committee's continued support.

To be sure, I thank your committee for this continued support.

STATEMENT OF MAGDALIN SAUTTER, NEBRASKA

I am submitting this statement to encourage your committee to continue your support of the North Loup irrigation project and particularly for your support of the appropriation of $19,470,000 for fiscal year 1988 in order that the construction of the North Loup project can continue.

Although I will not receive any direct benefits myself, I believe the wise use of our greatest natural resource—water—is of great importance to all of us. Without the wise conservation of our natural resource—water—the future of the Loup Valley would be very uncertain. So, I wish to take this opportunity to state that all of us need your committee's continued support.

To be sure, I thank your committee for this continued support.

STATEMENT OF JEROME PALACZ, ELBA, NEBR.

I am submitting this statement to encourage your committee to continue your support of the North Loup irrigation project and particularly for your support of the appropriation of $19,470,000 for fiscal year 1988 in order that the construction of the North Loup project can continue.

Although I will not receive any direct benefits myself, I believe the wise use of our greatest natural resource—water—is of great importance to all of us. Without the wise conservation of our natural resource—water—the future of the Loup Valley would be very uncertain. So, I wish to take this opportunity to state that all of us need your committee's continued support.

To be sure, I thank your committee for this continued support.

STATEMENT OF DIANE M. TUMA, NEBRASKA

The conservation of our greatest natural resource—water—will contribute to the nation's standard of living. Although I am not a farmer and will not benefit directly from the North Loup project, I believe the North Loup project is important to all of us.

The wise use of our greatest natural resource—water—depends on our forsightedness and implementation of sound conservation. Your committee's past support for the North Loup project exemplifies all of the above.

It is through your committee's wise support of conserving our greatest natural resource—water—that we are so confident your committee will continue to support the appropriation of $19,470,000 for fiscal year 1988 for the continued construction of the North Loup project for which I thank you very much.

STATEMENT OF ALLEN L. INGERLE, NEBRASKA

The conservation of our greatest natural resource—water—will contribute to the nation's standard of living. Although I am not a farmer and will not benefit directly from the North Loup project, I believe the North Loup project is important to all of us.

The wise use of our greatest natural resource—water—depends on our forsightedness and implementation of sound conservation. Your committee's past support for the North Loup project exemplifies all of the above.

It is through your committee's wise support of conserving our greatest natural resource—water—that we are so confident your committee will continue to support the appropriation of $19,470,000 for fiscal year 1988 for the continued construction of the North Loup project for which I thank you very much.

STATEMENT OF MAYBELLE J. PAYNE, NEBRASKA

I am a farmer residing in the North Loup project area. I, together with many other farmers in our area, share the same view that having a reliable water supply will stabilize the agricultural community of not only our area, but also the economy in the Loup River Valley area, the state of Nebraska, and the nation as a whole.

Your committee's support in the past has provided the necessary funding for the North Loup project setting in motion the means by which we in the Loup River Valley can have a reliable water supply. It is our understanding the appropriation needed for the continued construction of the North Loup project is $19,470,000 for fiscal year 1988, and we solicite your support of this amount.

I wish to take this opportunity to state that all of us need your committee's continued support for appropriations to complete the North Loup project, especially in view of the fact that the fiscal year 1988 budget request delays new construction on this project.

I thank your committee for this continued support.

STATEMENT OF MAYBELLE J. PAYNE, NEBRASKA

I am a farmer residing in the North Loup project area. I, together with many other farmers in our area, share the same view that having a reliable water supply will stabilize the agricultural community of not only our area, but also the economy in the Loup River Valley area, the state of Nebraska, and the nation as a whole.

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I thank your committee for this continued support.

STATEMENT OF JOE PAYNE, NEBRASKA

I am a farmer residing in the North Loup project area. I, together with many other farmers in our area, share the same view that having a reliable water supply will stabilize the agricultural community of not only our area, but also the economy in the Loup River Valley area, the state of Nebraska, and the nation as a whole.

Your committee's support in the past has provided the necessary funding for the North Loup project setting in motion the means by which we in the Loup River Valley can have a reliable water supply. It is our understanding the appropriation needed for the continued construction of the North Loup project is $19,470,000 for fiscal year 1988, and we solicite your support of this amount.

I wish to take this opportunity to state that all of us need your committee's continued support for appropriations to complete the North Loup project, especially in view of the fact that the fiscal year 1988 budget request delays new construction on this project.

I thank your committee for this continued support.

STATEMENT OF CARL ANDERSON, NEBRASKA

I am a farmer residing in the North Loup project area. I, together with many other farmers in our area, share the same view that having a reliable water supply will stabilize the agricultural community of not only our area, but also the economy in the Loup River Valley area, the state of Nebraska, and the nation as a whole.

Your committee's support in the past has provided the necessary funding for the North Loup project setting in motion the means by which we in the Loup River Valley can have a reliable water supply. It is our understanding the appropriation needed for the continued construction of the North Loup project is $19,470,000 for fiscal year 1988, and we solicite your support of this amount.

I wish to take this opportunity to state that all of us need your committee's continued support for appropriations to complete the North Loup project, especially in view of the fact that the fiscal year 1988 budget request delays new construction on this project.

I thank your committee for this continued support.

STATEMENT OF HAROLD P. RASMUSSEN, NEBRASKA

I am a farmer residing in the North Loup project area. I, together with many other farmers in our area, share the same view that having a reliable water supply will stabilize the agricultural community of not only our area, but also the economy in the Loup River Valley area, the state of Nebraska, and the nation as a whole.

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I wish to take this opportunity to state that all of us need your committee's continued support for appropriations to complete the North Loup project, especially in view of the fact that the fiscal year 1988 budget request delays new construction on this project.

I thank your committee for this continued support.

STATEMENT OF VERNA M. WELLS, NEBRASKA

I am a farmer residing in the North Loup project area. I, together with many other farmers in our area, share the same view that having a reliable water supply will stabilize the agricultural community of not only our area, but also the economy in the Loup River Valley area, the state of Nebraska, and the nation as a whole.

Your committee's support in the past has provided the necessary funding for the North Loup project setting in motion the means by which we in the Loup River Valley can have a reliable water supply. It is our understanding the appropriation needed for the continued construction of the North Loup project is $19,470,000 for fiscal year 1988, and we solicite your support of this amount.

I wish to take this opportunity to state that all of us need your committee's continued support for appropriations to complete the North Loup project, especially in view of the fact that the fiscal year 1988 budget request delays new construction on this project.

I thank your committee for this continued support.

STATEMENT OF LEON KLANECKY, NEBRASKA

Construction of the Calamus Dam and the North Loup project has brought considerable change to our area. The increased activity has generated many new jobs and a new sense of prosperity at a time when other areas of our nation have experienced difficulties.

Your committee's past support and committee's present support for the North Loup project is greatly appreciated. We believe your committee's continued support of the North Loup project will generate lasting benefits, not only for our area but for central Nebraska, for the state of Nebraska, and the entire nation.

Again, I wish to thank your committee for supporting the appropriation of $19,470,000 for fiscal year 1988 to provide the necessary funds for the continued construction of the North Loup project.

STATEMENT OF MRS. CHARLES MANCHESTER, NEBRASKA

Construction of the Calamus Dam and the North Loup project has brought considerable change to our area. The increased activity has generated many new jobs and a new sense of prosperity at a time when other areas of our nation have experienced difficulties.

Your committee's past support and committee's present support for the North Loup project is greatly appreciated. We believe your committee's continued support of the North Loup project will generate lasting benefits, not only for our area but for central Nebraska, for the state of Nebraska, and the entire nation.

Again, I wish to thank your committee for supporting the appropriation of $19,470,000 for fiscal year 1988 to provide the necessary funds for the continued construction of the North Loup project.

STATEMENT OF PAUL M. SCHUDEL, NEBRASKA

Construction of the Calamus Dam and the North Loup project has brought considerable change to our area. The increased activity has generated many new jobs and a new sense of prosperity at a time when other areas of our nation have experienced difficulties.

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Again, I wish to thank your committee for supporting the appropriation of $19,470,000 for fiscal year 1988 to provide the necessary funds for the continued construction of the North Loup project.

STATEMENT OF CARB M. LEHR, ELBA, NEBR.

Construction of the Calamus Dam and the North Loup project has brought considerable change to our area. The increased activity has generated many new jobs and a new sense of prosperity at a time when other areas of our nation have experienced difficulties.

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Again, I wish to thank your committee for supporting the appropriation of $19,470,000 for fiscal year 1988 to provide the necessary funds for the continued construction of the North Loup project.

STATEMENT OF MIKE NOWAK, ELBA, NEBR.

Construction of the Calamus Dam and the North Loup project has brought considerable change to our area. The increased activity has generated many new jobs and a new sense of prosperity at a time when other areas of our nation have experienced difficulties.

Your committee's past support and committee's present support for the North Loup project is greatly appreciated. We believe your committee's continued support of the North Loup project will generate lasting benefits, not only for our area but for central Nebraska, for the state of Nebraska, and the entire nation.

Again, I wish to thank your committee for supporting the appropriation of $19,470,000 for fiscal year 1988 to provide the necessary funds for the continued construction of the North Loup project.

STATEMENT OF RHODA JENSEN, NEBRASKA

Construction of the Calamus Dam and the North Loup project has brought considerable change to our area. The increased activity has generated many new jobs and a new sense of prosperity at a time when other areas of our nation have experienced difficulties.

Your committee's past support and committee's present support for the North Loup project is greatly appreciated. We believe your committee's continued support of the North Loup project will generate lasting benefits, not only for our area but for central Nebraska, for the state of Nebraska, and the entire nation.

Again, I wish to thank your committee for supporting the appropriation of $19,470,000 for fiscal year 1988 to provide the necessary funds for the continued construction of the North Loup project.

STATEMENT OF GLORIA NOVOTNY, ELBA, NEBR.

Construction of the Calamus Dam and the North Loup project has brought considerable change to our area. The increased activity has generated many new jobs and a new sense of prosperity at a time when other areas of our nation have experienced difficulties.

Your committee's past support and committee's present support for the North Loup project is greatly appreciated. We believe your committee's continued support of the North Loup project will generate lasting benefits, not only for our area but for central Nebraska, for the state of Nebraska, and the entire nation.

Again, I wish to thank your committee for supporting the appropriation of $19,470,000 for fiscal year 1988 to provide the necessary funds for the continued construction of the North Loup project.

STATEMENT OF DON CLEMENT, NEBRASKA

Your committee's continuing support of the North Loup project has finally made project irrigation on my farm a reality. This summer I will be irrigating from the project and offer my sincere thanks for a dream come true.

Please give your further support for the fiscal year 1988 budget request for $19,470,000 for the North Loup Division. This will provide for continued construction of the distribution system, thereby providing irrigation to many other farmers in this area.

STATEMENT OF ELDON LANGE, NEBRASKA

Your committee's continuing support of the North Loup project has finally made project irrigation on my farm a reality. This summer I will be irrigating from the project and offer my sincere thanks for a dream come true.

Please give your further support for the fiscal year 1988 budget request for $19,470,000 for the North Loup Division. This will provide for continued construction of the distribution system, thereby providing irrigation to many other farmers in this area.

STATEMENT OF ARVIN BREDTHAUER, ORD, NEBR.

Your committee's continuing support of the North Loup project has finally made project irrigation on my farm a reality. This summer I will be irrigating from the project and offer my sincere thanks for a dream come true.

Please give your further support for the fiscal year 1988 budget request for $19,470,000 for the North Loup Division. This will provide for continued construction of the distribution system, thereby providing irrigation to many other farmers in this area.

STATEMENT OF PAUL BREDTHAUER, ORD, NEBR.

Your committee's continuing support of the North Loup project has finally made project irrigation on my farm a reality. This summer I will be irrigating from the project and offer my sincere thanks for a dream come true.

Please give your further support for the fiscal year 1988 budget request for $19,470,000 for the North Loup Division. This will provide for continued construction of the distribution system, thereby providing irrigation to many other farmers in this area.

STATEMENT OF SHIRLEY WALKER, NEBRASKA

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF JUDE FREEMAN, NEBRASKA

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF KILDAY, INC., PALMER, NEBR.

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF DALE BURMOOD, ELBA, NEBR.

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF JAMES L. UBACH, ELBA, NEBR.

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF MRS. ELMER HORNICKEL, ORD, NEBR.

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF RON RICE, NEBRASKA

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF MARVIN SETLIK, NEBRASKA

The construction progress on the North Loup Division is very encouraging to those of us who are keenly interested in seeing this project completed. It is our understanding that the project is about 60 percent complete with irrigation service being available to about 22,000 acres this summer.

The project is now a reality, thanks to your committee's past support and now the committee's continued support is needed to complete this project.

In order for the construction to continue, we need your committee's support for fiscal year 1988 appropriation in the sum of $19,470,000.

Again, I do want to take this means to thank your committee for their continued support of the North Loup project.

STATEMENT OF ROBERT E. LETH, COTESFIELD, NEBR.

I am a farmer in the North Loup project. This summer I expect to receive irrigation water from this project for the very first time. I wish to thank the subcommittee for it's long-time support of this project.

Your continued support of the North Loup project in the fiscal year 1988 budget deliberations would be sincerely appreciated. Now that Calamus Dam and the main supply canal are completed, I urge you to accelerate the construction of the remaining distribution systems.

The sooner this project can be completed the sooner the individual irrigators can stabilize their long-term operations, thereby increasing their chances of surviving these severe economic times.

STATEMENT OF ALAN D. KOELLING, NEBRASKA

I am a farmer in the North Loup project. This summer I expect to receive irrigation water from this project for the very first time. I wish to thank the subcommittee for it's long-time support of this project.

Your continued support of the North Loup project in the fiscal year 1988 budget deliberations would be sincerely appreciated. Now that Calamus Dam and the main supply canal are completed, I urge you to accelerate the construction of the remaining distribution systems.

The sooner this project can be completed the sooner the individual irrigators can stabilize their long-term operations, thereby increasing their chances of surviving these severe economic times.

STATEMENT OF KENT E. HORNICKEL, NEBRASKA

I am a farmer in the North Loup project. This summer I expect to receive irrigation water from this project for the very first time. I wish to thank the subcommittee for it's long-time support of this project.

Your continued support of the North Loup project in the fiscal year 1988 budget deliberations would be sincerely appreciated. Now that Calamus Dam and the main supply canal are completed, I urge you to accelerate the construction of the remaining distribution systems.

The sooner this project can be completed the sooner the individual irrigators can stabilize their long-term operations, thereby increasing their chances of surviving these severe economic times.

STATEMENT OF DON CLEMENT, NEBRASKA

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Your continued support of the North Loup project in the fiscal year 1988 budget deliberations would be sincerely appreciated. Now that Calamus Dam and the main supply canal are completed, I urge you to accelerate the construction of the remaining distribution systems.

The sooner this project can be completed the sooner the individual irrigators can stabilize their long-term operations, thereby increasing their chances of surviving these severe economic times.

STATEMENT OF THOMAS KNUTSON, GENERAL MANAGER, FARWELL UNIT, NEBRASKA

I urge your support for the President's request of $19,470,000 for the Twin Loups project in Nebraska. The project will provide numerous economic benefits to central Nebraska and the state.

The area has faced hard times in the last few years and this will provide a shot in the arm in regard to economic benefits. It will provide jobs and agricultural stability.

I urge your support for the President's request of $19,470,000 for the Twin Loups project.

STATEMENT OF WILLIAM M. BREMER, NEBRASKA

The conservation of our greatest natural resource—water—will contribute to the nation's standard of living.

Although I am not a farmer and will not benefit directly from the North Loup project, I believe the North Loup project is important to all of us.

The wise use of our greatest natural resource—water—depends on our foresightedness and implementation of sound conservation.

Your committee's past support for the North Loup project exemplifies all of the above.

It is through your committee's wise support of conserving our greatest natural resource—water—that we are so confident your committee will continue to support the appropriation of $19,470,000 for fiscal year 1988 for the continued construction of the North Loup project for which I thank you very much.

BLAIR-SITCUM WATERWAY AND GRAYS HARBOR, WASH.

STATEMENT OF JOHN TERPSTRA, SENIOR DIRECTOR OF FACILITIES, PORT OF TACOMA, WASH.

Senator HATFIELD. Now, if the Port of Takoma presentators would come forward.

John, how are you?

Mr. TERPSTRA. Fine, sir.

Senator HATFIELD. Welcome.

Mr. TERPSTRA. On the personal side, sir, I would like to tell you that I am a former Oregonian and an Oregon stater, and although I live in the state of Washington and work in Washington now, I still have a lot of fine feelings about Oregon.

Senator HATFIELD. We sort of have a British view of Washington as part of the British mother country and part of the Oregon empire. We have never really given up hope that maybe there will be a reunion some day. Maybe you could be our wonderful internal missionary.

Please proceed to give us a summary, if you will, of your testimony. I will put the entire statement in the record and following yours, I would like to also, without objection, put in Hank Soike's letter that relates to Gray's Harbor.

Mr. TERPSTRA. I will very quickly summarize.

I am John Terpstra, senior director of facilities of the Port of Takoma, a public port in the state of Washington. The Port of Takoma is a sponsor of a recently authorized federal project called the Blair-Sitcum project. The primary item in the project is the replacement of the narrow navigation opening of a bridge and dredging through a 45-foot depth of a very important channel which will improve our ability to serve the nation as a throughput port of future years.

The project was authorized in 1986. There has been continuing engineering and planning that has gone on prior to the authorization, and we are now to the point where the Corps of Engineers tells us they can start on the plans and specifications for the bridge with a very optimistic schedule, if all was well, to complete construction as early as 1992.

Unfortunately, we find that the President's budget has no money for this project, and we are here today to ask that you consider the addition of $700,000 to the 1988 budget so that this project can move forward and help the future growth of our port.

The money would be for the first half of the plans and specifications for the bridge, which would total $1.4 million, and so $700,000 would be for the first year.

[The statements follow:]

STATEMENT OF JOHN TERPSTRA, SENIOR DIRECTOR OF FACILITIES, PORT OF TACOMA, WASH.

Mr. Chairman and members of the Subcommittee, my name is John Terpstra and I am the Senior Director of Facilities at the Port of Tacoma in the State of Washington.

My purpose in testifying today is to request your continuing support of the Blair-Sitcum Navigation Federal Water Resources Project at the Port of Tacoma. The principal features of this project include the replacement of a narrow bridge and the deepening of the Blair Federal Waterway.

The Port of Tacoma has testified in support of this high national benefit project on other occasions during the years since the Corps of Engineers' initial favorable report to Congress in 1975. This year, we are particularly pleased to be able to testify for a project which was authorized by the 99th Congress.

The Port of Tacoma, because of its efficient and economical means to move cargo, continues to be one of our nation's most productive ports. In 1985, it handled the seventh largest container volume in North America and the 25th largest container volume in the world.

We wish to point out to you that the Port of Tacoma has importance as a national asset. This is reflected not only by its high container shipping productivity, but also by its diversified cargoes. Our deepwater marine terminal facilities provide the shipping link for many strategic imported commodity resources such as alumina, copper, lead and zinc ores, and natural rubber. Our outstanding inland rail and highway transportation connections handle exports to the world marketplace of such basic commodities as forest products and grains as well as the high-value goods of farm machinery and equipment, turbines, and locomotives.

We believe the Port of Tacoma has the unique resources necessary to meet the challenge of increasing trade with the Pacific Rim countries which has grown so dramatically in recent years. Of the Port's 2400 acres, over 800 acres are poised for development if the navigation improvements of this federal project can be realized. The Port needs to put this land to use for such facilities as container terminals, warehouses and bulk handling facilities. About 400 acres of this available land which is served by the Blair Waterway are suitable for use as deepwater marine terminals, but cannot be developed to maximum potential until a wider bridge provides ships access to this area and the waterway is dredged to meet modern shipping requirements.

Another unique resource at the Port of Tacoma which we believe is a key to our future growth is our industry-leading success in intermodal, sea-rail transportation. This "intermodal" connection provides efficient and economical transit of cargo to the Midwest and East Coast of the United States. We are a truly "national" container port with over 80 percent of the containers passing through our facilities traveling to or from the interior of the country. The Port of Tacoma has been a leader in the development of these "intermodal yards" and was the first port on the West Coast to have an on-dock intermodal facility. It is now the only port on the West Coast with two such dockside intermodal yards. To continue to develop facilities such as container terminals and intermodal yards, ample land is needed adjacent to marine terminals. Much of this available land is located on the upper Blair Waterway.

In 1975, the Corps of Engineers recommended the Blair-Sitcum navigation project to the United States Congress. This project, which includes the deepening of the Blair Waterway to a 45 foot depth and the replacement of the present State Route 509 Blair Bridge to increase navigation passage from 150 to 300 feet, has maintained its high benefit-to-cost ratio over the many years awaiting its authorization.

In 1982, the Corps reaffirmed their earlier report recommending this project as a national priority. And with passage of the Water Resources Development Act of 1986, the Blair-Sitcum Project has now been authorized by Congress.

Because this process of authorization has taken 11 years, it has become even more important that we proceed expeditiously toward actual construction. Unlocking of the important land resources of the Blair Waterway made sense in 1976 and 1982; today, the project is urgently overdue. It is vital, therefore, that appropriate planning and engineering remain on schedule. Continuing engineering and planning work provided for in FY 1987 appropriations will bring the bridge portion of this project to a point where all that remains before actual construction is the production of plans and specifications.

If we can maintain this momentum, it is possible tht the project could be completed as early as 1992. Unfortunately, we find there are no funds in the President's budget for this project in FY 1988. Major General Robertson of the Corps of Engineers, however, stated during his testimony before the House Energy and Water Development Subcommittee in February of this year that the next step in the process is the initiation of the final engineering and design. The estimated cost of this work over a two year period is $1.4 million; therefore, we are asking that, in order to keep this project on schedule in FY 1988, you provide for the first half of this amount, $700,000.

On behalf of the Port of Tacoma, I respectfully request your support in adding this appropriation of $700,000 for FY 1988.

STATEMENT OF HENRY E. SOIKE, GENERAL MANAGER, PORT OF GRAYS HARBOR, WASH.

Mr. Chairman and Members of the Committee, my name is Henry E. Soike and I am the General Manager of the Port of Grays Harbor which is Washington States only Deep Water Coastal Port.

Our navigation facilities provide the access link between federal, state, and private timber resources and the Pacific Rim countries of Japan, Korea, and the Peoples Republic of China.

Our 1986 Annual Report reveals that 66 percent of the vessels departing from Grays Harbor exceeded the current project depth. This was accomplished only by over dredging berth areas, accepting vessel delays and sailing at maximum tide conditions. Also, current practices of maximizing cargo loading by reducing bunkering and delaying ballasting until clearing the Harbor is further minimizing margins of safety. A letter from Captain M.R. Flavel, dated February 26, 1987, describing the hazards of this practice is included with this statement.

In 1966, the U.S. Army Corps of Engineers (Corps) initiated a study to determine the feasibility of increasing the existing -30 foot draft of our navigation channels. Formal authorization of the project is included in Public Law 99-662, The Water Resources Development Act of 1986.

As Local Sponsor, we are working with the Corps on the Local Cooperation Agreement which will commit $20,000,000 of the Local Cost Sharing funds prior to the start of construction in FY 89.

Continuation of Planning and Engineering on this project has been ongoing by the Corps, and we are pleased the FY 88 Budget contains $700,000 to complete the General Design Memorandum and prepare Plans and Specifications for the dredging.

We wish to express our appreciation to the Committee for its past considerations in providing necessary study funds for the Grays Harbor Deeper Draft Project.

I thank you for the opportunity to submit this Statement for the record.

STATEMENT OF CAPT. M.R. FLAVEL, ABERDEEN, WASH.

Please allow me to describe one night in the life of a Grays Harbor Bar Pilot.

I was dispatched to ITT berth on 02-24-87 at 2115 hours to the m/v Buffalo. She was scheduled to sail at 2130 hours. When I arrived at the vessel I read the draft and found she was about even keel of 10.36.

Low water that evening was at 1646 (+.1) and high water was at 2321 (+8.5). The weather was clear with fog patches over Hoquiam and upriver of ITT. The m/v Green Ocean was waiting just upriver of ITT to slip into the berth as soon as the Buffalo departed.

While the vessel was alongside the dock the vessel had a 1 1/2 degree starboard list. I requested to the Master that the list be corrected. I was concerned that the list would add to the draft of the vessel and on this small tide there was no allowance for extra draft. I was attempting to keep at least 1 foot under the keel. The Master informed me that this GM was 20 cm. and he was planing to add ballast after the vessel passed the Bar. He did not appear, at that time, to be concerned about his GM on the transit.

The Master then straightend the vessel up and we proceeded with the undocking. After undocking, and the vessel was slightly downriver from ITT dock, the vessel developed a 2 degree port list. After about 20 minutes the list was 4 degrees to port. By the time the vessel had reached bouy #30 (about 3 miles from the berth) the list had increased to 6 degrees to port. Since it was obvious that we were in serious jeopardy if this continued, the

Master asked me if he could pump in ballast to correct the problem. I agreed that he should press up his tanks as soon as possible. Of course, during all of this, the vessel was extremely difficult to steer and took numerous sheers. It is possible that the list did not get larger because the vessel was sliding along the muddy river bottom on the low side. As you are aware, a 1 degree list on a vessel of this size adds about 1 foot of draft to the vessel. The list then peaked out at about 6 1/2 degrees to port and by the time we had reached the bar the vessel had a slight port list and appeared to ride quite comfortably in the light bar swell.

I must point out that our situation was extremely critical. The fact that we made a successful transit was only due to; (a) a very good quartermaster, (b) clear visibility, (c) minimual swell on the Bar. I am assuming that the master pumped ballast into the vessel and that the draft was substantially over the 10.36 maximum allowable draft.

A solution to problems like this must be found. The GM of a vessel on the transit from the berth to the bar must be considerably more than 20 cm.. A GM of 50 cm. is usually better. The ballast tanks should NEVER be adjusted on the transit from the berth to the bar. During this period the ballast tanks should either be pressed up or empty. A suggestion might be that a surveyor such as NCB attend and survey the vessel prior to sailing. It might be that minimum standards for GM will have to be legislated. The industry seems to recognize a need for minimum GM at sea, but not for the inland transit.

The purpose of this letter is to apprise you of the situation and also notify you that in the future I intend to refuse any vessel which appears to be in a marginal stability situation.

Your kind attention to this matter would be appreciated.

SUBCOMMITTEE RECESS

Senator HATFIELD. Thank you. I appreciate your succinct comments, and we will be wrestling with these matters. As you know, we have faced a lot of difficulty over the last several years on matters relating to projects of this kind. But we normally have been able to at least assert the role of the committee in continuing on schedule.

I think the Port of Takoma has been important over the years, so I will use what influence I may have to continue our commitments.

Mr. TERPSTRA. I appreciate it very much, sir.

Senator HATFIELD. Thank you. We will recess until 2 o'clock this afternoon, when we will continue public witnesses hearings.

[Whereupon, at 11:10 a.m., the subcommittee was recessed to reconvene at 2 p.m. the same day.]

(Afternoon Session, 2 p.m., Wednesday, April 1, 1987)

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator Reid [presiding]. The Energy and Water Development Subcommittee will come to order.

I want to welcome each of the respective witnesses to the hearing today. As you can see, we have a large number of witnesses that wish to be heard.

Therefore, in accordance with our notification to each of the witnesses, it will take some restraint on the part of everyone to hold their oral testimony to a minimum in order for all of you that have requested to testify to be given that opportunity.

I would, therefore, ask that the detailed prepared statement that each of you have prepared be sumitted for the record, where they will be carefully reviewed by this subcommittee. Then, if each witness would summarize or highlight the important points of his oral testimony, this would be most helpful.

We welcome you here and, of course, recognize at this time the junior Senator from the state of California, Pete Wilson.

Senator Wilson?

California Water Resources Development Projects

STATEMENT OF HON. PETE WILSON, U.S. SENATOR FROM CALIFORNIA

Senator Wilson. Thank you very much, Senator Reid.

I will attempt to follow your wishes and ask that my statement in full be submitted for the record, and I will summarize it now as briefly as possible.

Senator Cochran. Take all the time you need.

Senator Wilson. Thank you.

Mr. Chairman, the room is filled with your good neighbors from California. They are here this afternoon, many of them, to testify as to the needs of the state of California.

Specifically, there are witnesses representing the California Water Commission and the California Marine Affairs and Navigation Conference [C–MANC], who have evaluated the President's budget request and will offer their insights into California's vital needs.

I would like to thank and congratulate the commission and C–MANC, as it is known, for their efforts to insure California's priorities are addressed.

I want to particularly commend the commission for their invaluable efforts to make fiscally responsible recommendations.

Both organizations offer important suggestions and I feel that they do an outstanding job of representing their respective constituencies and the people of the state in general.

Mr. Chairman, although California has exceptional needs arising from its position as the nation's most populous state. We also understand the need for deficit reduction and realize that reduction efforts must touch all areas of the budget.

As in past years, I will not advocate an increase in federal spending above the President's request for water resource needs in my state. But, if the committee in its deliberations determines that funds are available for projects that are not included, let me emphasize that we are most interested in seeing that California receives its fair share of moneys that are available based on its unique requirements.

Should the committee make such a decision, I would ask that very careful consideration be given to the priorities outlined by the California Water Commission, by C-MANC, and by the other witnesses representing California, from whom you will hear today.

Mr. Chairman, what these good folk from California will tell you is that we are having a very dry year in our state. That it is all too easy to forget the great need for efficient flood control and preventive erosion measures at a time when we are not actually confronting them.

But, one doesn't need a very long memory to be reminded of the terrible floods that devastated northern California last year, and in prior years, to recognize the ongoing need for adequate flood protection.

The 1986 floods caused over $400 million in private and public damage, highlighting the fact that preventive measures are a more sound investment than spending millions on repair work.

With these thoughts in mind, I urge the committee to give careful consideration to the testimony that will follow, both those requests that support funds recommended by the President's budget and those requests that are outside it.

With the committee's leave, I will submit for the record my complete statement touching on several projects about which you will hear in further detail from the witnesses who follow me.

I have a feeling Mr. Chairman that we are about to be summoned to the floor, but when the committee resumes I will express my personal gratitude to you for the courtesy and consideration given to the witnesses.

As you say, there are many to be heard from and I do not wish to delay the committee's hearing of them. We are asking that consistent with budget requirements that needs of California be given the consideration that they so clearly require.

I know that will happen, so I will thank you and the other members in advance.

[The statement follows:]

STATEMENT OF SENATOR WILSON OF CALIFORNIA

MR. CHAIRMAN, I APPRECIATE THE OPPORTUNITY TO TESTIFY BEFORE YOUR COMMITTEE REGARDING THE PROPOSED FISCAL YEAR BUDGET REQUESTS FOR THE ARMY CORPS OF ENGINEERS PROJECTS AND BUREAU OF RECLAMATION PROJECTS IN THE STATE OF CALIFORNIA.

THIS AFTERNOON YOU WILL HEAR FROM SEVERAL CALIFORNIANS CONCERNING A VARIETY OF IMPORTANT WATER DEVELOPMENT ACTIVITIES AFFECTING OUR STATE. THE CALIFORNIA WATER COMMISSION AND THE CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE (C-MANC) HAVE EVALUATED THE PRESIDENT'S BUDGET REQUEST AND WILL OFFER THEIR INSIGHTS INTO CALIFORNIA'S VITAL NEEDS.

I WOULD LIKE TO THANK AND CONGRATULATE THE WATER COMMISSION AND C-MANC FOR THEIR EFFORTS TO ENSURE CALIFORNIA'S PRIORITIES ARE ADDRESSED. I WANT TO PARTICULARLY COMMEND THE WATER COMMISSION FOR THEIR INVALUABLE EFFORTS TO MAKE FISCALLY RESPONSIBLE RECOMMENDATIONS. BOTH ORGANIZATIONS OFFER IMPORTANT SUGGESTIONS, AND I FEEL THAT THEY DO AN OUTSTANDING JOB OF REPRESENTING THEIR RESPECTIVE CONSTITUENCIES.

MR. CHAIRMAN, ALTHOUGH CALIFORNIA HAS EXCEPTIONAL NEEDS ARISING FROM ITS POSITION AS THE NATION'S MOST POPULOUS STATE, WE UNDERSTAND THE NEED FOR DEFICIT-REDUCTION AND REALIZE THAT REDUCTION EFFORTS MUST TOUCH ALL AREAS OF THE BUDGET.

THEREFORE, AS IN PAST YEARS, I WILL NOT ADVOCATE AN INCREASE IN FEDERAL SPENDING ABOVE THE PRESIDENT'S REQUEST FOR WATER RESOURCE NEEDS IN MY STATE. HOWEVER, I WOULD LIKE TO NOTE THAT THERE ARE SEVERAL CRUCIAL PROJECTS WHICH HAVE BEEN OMITTED FROM THE PRESIDENT'S BUDGET, AND I AM VERY INTERESTED IN SEEING THAT CALIFORNIA RECEIVES ITS FAIR SHARE BASED ON ITS UNIQUE REQUIREMENTS.

SHOULD THE COMMITTEE DECIDE THAT FUNDS IN EXCESS OF THE PRESIDENT'S REQUEST ARE AVAILABLE FOR APPROPRIATION, I WOULD ASK THE COMMITTEE TO GIVE CAREFUL CONSIDERATION TO THE PRIORITIES OUTLINED BY THE CALIFORNIA WATER COMMISSION, C-MANC, AND THE OTHER CALIFORNIA WITNESSES YOU WILL HEAR FROM TODAY.

MR. CHAIRMAN, WHAT THESE GOOD FOLK FROM CALIFORNIA WILL TELL YOU IS THAT WE ARE HAVING A VERY DRY YEAR IN OUR STATE, AND IT IS ALL TOO EASY TO FORGET THE GREAT NEED FOR EFFICIENT FLOOD CONTROL AND PREVENTIVE EROSION MEASURES. BUT ONE ONLY NEEDS TO BE REMINDED OF THE TERRIBLE FLOODS THAT DEVASTATED NORTHERN CALIFORNIA LAST YEAR TO RECOGNIZE THE ONGOING NEED FOR ADEQUATE FLOOD PROTECTION. THE 1986 FLOODS CAUSED OVER $400 MILLION IN PRIVATE AND PUBLIC DAMAGE, HIGHLIGHTING THE FACT THAT PREVENTIVE MEASURES ARE A MORE SOUND INVESTMENT THAN SPENDING MILLIONS ON REPAIR WORK.

WITH THESE THOUGHTS IN MIND, I WANT TO DRAW THE COMMITTEE'S ATTENTION TO THE FOLLOWING FLOOD CONTROL AND FLOOD DAMAGE PREVENTION PROJECTS WHICH HAVE BEEN INCLUDED IN THE PRESIDENT'S BUDGET:

PROJECT	PRESIDENT'S REQUEST
SURVEYS	
CALLEGUAS CREEK	$ 200,000
NO. CALIFORNIA STREAMS-DRY CREEK	75,000
IMPERIAL & SAN DIEGO STREAMS FLOWING INTO SALTON SEA	500,000
LOS ANGELES CO. DRAINAGE AREA	650,000
MARIN CO. SHORELINE	100,000
SACRAMENTO-SAN JOAQUIN DELTA INVESTIGATION	210,000
NO. CALIFORNIA STREAMS-SACRAMENTO METRO INTERIM	450,000
AMERICAN RIVER WATERSHED	200,000
BLUE RIDGE	100,000
SAN FRANCISCO BAY SHORELINE	100,000
SANTA CLARA AND SOUTHERN ALAMEDA INTERIM	120,000
NORTH BAY INTERIM	376,000
SAN MATEO-NORTH BAY INTERIM	224,000
SAN JOAQUIN RIVER BASIN-TULE RIVER	260,000
SAN JOAQUIN RIVER BASIN-KAWEAH RIVER	260,000
SANTA ANA RIVER & ORANGE CO. INTERIM III	350,000
FINAL REPORT	300,000

PRECONSTRUCTION ENGINEERING AND DESIGN

CALIENTE CREEK	100,000
GUADALULPE RIVER	625,000
SANTA ANA RIVER MAIN STEM	5,100,000

CONSTRUCTION - GENERAL

CORTE MADERA CREEK	1,700,000
DRY CREEK-WARM SPRINGS	8,200,000
FAIRFIELD VICINITY STREAMS	3,900,000
LOWER SAN JOAQUIN RIVER AND TRIBUTARIES	1,002,000
MERCED CO. STREAMS	2,400,000
NEW MELONES LAKE	4,100,000
PAJARO RIVER-UVAS CARNADERO	1,865,000
REDBANK AND RANCHER	1,900,000
SACRAMENTO RIVER-MAJOR & MINOR TRIBUTARIES	98,000
SACRAMENTO RIVER BANK PROTECTION	9,500,000
SACRAMENTO RIVER FLOOD CONTROL PROJECT	2,800,000
SAN LUIS REY RIVER	8,500,000
SWEETWATER RIVER	4,913,000
WALNUT CREEK	5,100,000
WILDCAT AND SAN PEDRO CREEKS	5,360,000

ADDITIONALLY, I WOULD LIKE TO BRING THE OPERATION AND MAINTENANCE REQUIREMENTS OF MY STATE TO THE COMMITTEE'S ATTENTION. IT IS IMPORTANT TO RECOGNIZE THAT MANY SITES MAY NEED DREDGING AND OTHER MAINTENANCE DURING FY 88 TO ENSURE MAXIMUM PUBLIC BENEFITS AND SAFETY FOR NAVIGATION, HYDROPOWER AND FLOOD CONTROL. FOR EXAMPLE, MY OFFICE HAS BEEN CONTACTED CONCERNING A DANGEROUS NAVIGATION SITUATION THAT NEEDS TO BE ADDRESSED IN OCEANSIDE HARBOR. HOWEVER, GIVEN BUDGET CONSTRAINTS AND THE FACT THAT SPECIFIC ALLOCATIONS OFTEN IMPEDE THE CORPS' ABILITY TO ADJUST TO CONTINUOUSLY CHANGING NEEDS, I WILL NOT ATTEMPT TO PRIORITIZE REQUESTS FOR THE COMMITTEE AT THIS TIME. RATHER IT IS MY HOPE THAT AS IN THE PAST, THE CORPS WILL ADDRESS THESE CRITICAL NEEDS AS CIRCUMSTANCES REQUIRE ACTION.

MR. CHAIRMAN, WITH REGARD TO APPROPRIATIONS FOR THE BUREAU OF RECLAMATION, WE FACE THE DILEMMA ONCE AGAIN OF TOO MANY WORTHY PROJECTS AND TOO FEW DOLLARS TO SPEND. THE PRESIDENT'S BUDGET HAS REQUESTED FUNDS FOR A NUMBER OF THESE WORTHY PROJECTS, A SAMPLE OF WHICH I WOULD LIKE TO DRAW TO YOUR ATTENTION:

PROJECT	**PRESIDENT'S REQUEST**
SACRAMENTO RIVER DIVISION	4,644,000
AUBURN-FOLSOM SOUTH UNIT	1,000,000
SAN LUIS UNIT	17,941,000
MISCELLANEOUS PROJECT FACILITIES	
TRINITY RIVER RESTORATION	5,105,000
SAN FELIPE DIVISION	7,000,000
OTHER PROJECTS	
ELSINORE MWD	4,400,000
OAKDALE IRRIGATION DISTRICT	253,000
RAMONA MWD	6,789,000
RANCHO CA. WATER DISTRICT	8,640,000
RAINBOW MWD	1,435,000
SANTA ANA WATERSHED PROJECT AUTHORITY	2,172,000
COLORADO RIVER SALINITY CONTROL PROJECT	
PARADOX VALLEY UNIT	11,383,000
GRAND VALLEY UNIT	8,525,000
COLORADO RIVER WATER IMPROVEMENT QUALITY	875,000
COLORADO RIVER BASIN SALINITY CONTROL PROJECT-TITLE I	23,984,000
OTHER BuREC PROGRAMS	
COLORADO RIVER FRONT	6,242,000

TO THE EXTENT THAT FUNDS BECOME AVAILABLE, LET ME MENTION A FEW CORPS AND BuREC PROJECTS NOT INCLUDED IN THE PRESIDENT'S BUDGET THAT THE COMMITTEE SHOULD CONSIDER FUNDING:

ARMY CORPS PROJECTS:

INSPECTION OF COMPLETED WORKS - SACRAMENTO RIVER FLOOD CONTROL PROJECT
SAN JOAQUIN RIVER BASIN - CALAVERAS RIVER FLOOD DAMAGE PREVENTION PROJECT
SANTA BARBARA COUNTY STREAMS - MISSION CREEK FLOOD DAMAGE PREVENTION PROJECT
CACHE CREEK FLOOD CONTROL PROJECT (FUNDS IN ADDITION TO PRESIDENT'S REQUEST TO BE USED FOR PREPARATION OF PLANS FOR RAISING PERIMETER LEVEES)
COYOTE AND BERRYESSA CREEKS FLOOD CONTROL PROJECT
NAPA RIVER FLOOD CONTROL PROJECT
WALNUT CREEK BASIN INVESTIGATION
SACRAMENTO RIVER, CHICO LANDING TO RED BLUFF BANK PROTECTION PROJECT

BuREC PROJECTS

SUISUN MARSH PROTECTION - CONSTRUCTION
DELTA SUPPORT STUDIES
UNITED WATER CONSERVATION DISTRICT LOAN
SAN JOAQUIN VALLEY CONVEYANCE STUDY
SAN BERNARDINO GROUND WATER INVESTIGATION
CENTRAL VALLEY PROJECT OPERATION AND MAINTENANCE ($44,872,000 FOR CVP O&M INSTEAD OF THE REQUESTED $34,872,000)

AGAIN, IT IS NOT MY INTENT THAT OUR REQUEST EXCEED THE AMOUNT THE PRESIDENT HAS REQUESTED, BUT I WOULD LIKE TO URGE THE COMMITTEE TO MAKE FUNDS AVAILABLE FOR THESE PROJECTS IN THE EVENT THAT THE COMMITTEE DECIDES THAT FUNDS IN EXCESS OF THE PRESIDENT'S REQUEST ARE AVAILABLE. I WOULD POINT OUT THAT THE PROJECTS I HAVE MENTIONED THAT ARE NOT IN THE PRESIDENT'S BUDGET ARE ONLY A HANDFUL OF THE MANY WORTHY PROJECTS IN NEED OF FY 88 FUNDS, AND I DO NOT INTEND THAT THE NEEDS OF ANY OF THE PROJECTS MENTIONED IN THE PRESIDENT'S BUDGET BE SACRIFICED TO MAKE ROOM FOR THESE ADDITIONAL REQUESTS. AS HAS HAPPENED IN THE PAST, IT IS MY HOPE THAT ROOM MAY BE FOUND THROUGHOUT THIS OVERALL BUDGET FOR MINOR CHANGES THAT WILL ALLOW TIMELY PROGRESSION OF THE ABOVE MENTIONED PROJECTS WITHOUT SIGNIFICANTLY IMPEDING ANY ONE PROJECT.

MR. CHAIRMAN, I RECOGNIZE THE DIFFICULTY YOUR COMMITTEE FACES GIVEN THE CURRENT BUDGET CONSTRAINTS. I DEEPLY APPRECIATE THE FAIRNESS YOUR COMMITTEE HAS EXHIBITED ON MATTERS OF THIS KIND IN THE PAST, AND I KNOW THAT THESE REQUESTS WILL BE GIVEN CAREFUL CONSIDERATION. YOUR STAFF HAS ALWAYS BEEN EXTREMELY HELPFUL TO MY OFFICE, AND I AM MOST APPRECIATIVE OF THEIR SUPERB EFFORTS. FINALLY, I WOULD LIKE TO THANK YOU, MR. CHAIRMAN AND THE OTHER COMMITTEE MEMBERS FOR YOUR ATTENTION TO THESE REQUESTS.

PREPARED STATEMENT OF SENATOR CRANSTON

Senator **Cochran** [presiding]. Thank you Senator Wilson.

I understand that Senator Cranston had hoped to be here, but will not be able to because of his other responsibilities, so we'll put his entire statement in the record at this point.

[The statement follows:]

STATEMENT OF SENATOR CRANSTON

Mr. Chairman, I'm pleased to be here this afternoon to testify in support of Fiscal Year 1988 funding for the Bureau of Reclamation and Army Corps of Engineers water programs in California.

As in past years, the Subcommittee will be hearing from the California Water Commission, the California Marine Affairs and Navigation Conference, and others regarding the importance of these water supply, flood control, beach erosion control, and navigation projects to our state. These agencies understand the necessity for fiscal restraint. But because the Administration's budget does not meet some very real needs, they will be asking for augmentations to the budget. In fact, this is the first time in four years that the California Water Comission is requesting funding beyond the President's budget. The California Marine Affairs and Navigation Conference also is recommending additional funding for a limited number of projects.

For Fiscal Year 1988, the President's budget proposes an increase of 10 percent in the Bureau of Reclamation's programs, with a $98 million increase for Bureau construction. But the budget proposes to cut Bureau programs in California by $5.5 million, down 5 percent from Fiscal Year 1987.

I appreciate the Administration's goal of completing projects already under construction in the most timely manner. But I question the wisdom of accomplishing this by terminating work on important ongoing studies and eliminating or significantly reducing funds to maintain existing projects. The continuity of studies will be lost if deferred for a year or longer. Failure to fund operation and maintenance work can result in higher costs at a later date. Moreover, in a number of instances in which the Administration has requested no appropriation for Fiscal Year

1988 the federal government has an obligation to participate in funding the water programs.

I would like to highlight just a few examples where increases in the Bureau budget are needed.

Suisun Marsh Protection -- construction

In 1986 Congress approved, and the Bureau of Reclamation and California Department of Water Resources executed, the Suisun Marsh Preservation Agreement. The Agreement provides for the Bureau to pay 40 percent of the costs of construction of facilities to maintain the brackish quality of water in the Suisun Marsh and mitigate for changes there caused by the operation of the Central Valley Project and the State Water Project. However, there are no monies in the budget and the non-federal entities have paid most of the costs to date. An appropriation of $15,560,000 in Fiscal Year 1988 as requested by the California Water Commission will reimburse the state for funds spent in past years and will allow the Bureau to pay its ongoing share of the cost of constructing the Suisun Marsh facilities as provided in the Suisun Marsh Agreement.

Trinity River Restoration Program -- construction

In 1984 Congress enacted legislation establishing a 10 year management program to restore the Trinity River, a significant fishery resource. Under the statute, 35 percent of the program costs will be repaid by the federal government. At the present level of funding, the federal government commitments made in the 10 year program will not be met. In order for those commitments to be kept and for the restoration program to proceed on schedule, the funding level must be increased by $1 million. An appropriation of $6,105,000 as recommended by the California Water Commission will permit construction of Buckhorn Dam to be completed in two years rather than three, providing a substantial cost savings.

Central Valley Project -- operation and maintenance

Adequate funding is necessary to keep the Central Valley Project in an efficient operating condition for proper service. I'm advised there is a backlog of extraordinary maintenance and replacement work on the Central Valley Project. However, the Administration's budget reflects a reduction of nearly $10 million from the current level of $43,234,000 for maintenance of federal and joint facilities. Californians are requesting $44,603,000 to do the needed maintenace work and to fulfill the federal government's obligation to reimburse the Friant Water Users Authority and the state for the costs they incurred in operating and maintaining the Friant-Kern Canal and the San Luis Unit of the CVP respectively.

United Water Conservation District -- loan

I would like to add a word of support for funding the United Water Conservation District's Freeman Diversion Improvement Project in Ventura County. This project has been approved under the Small Reclamation Projects Act loan program. The project is designed to increase the volume of water that could be diverted from the Santa Clara River to retard seawater intrusion. It includes constuction of a permanent diversion facility across the Santa Clara River, construction of a conveyance canal, and construction of a desilting basin adjacent to spreading ponds. The District is seeking an appropriation of $14,550,000 in Fiscal Year 1988 for this project.

Turning to the budget for the Corps of Engineers, I'm pleased to note that the Corps budget has not been cut. In fact, nationwide it is up slightly, about 4 percent, and is up for California as well. Nonetheless there are several projects not included in the President's budget which I'd like to call to the Subcommittee's attention.

Inspection of Completed works -- Sacramento River flood control

As the Subcommittee knows, most of the flood control facilities on the Sacramento River are 50 to 100 years old. The facilities show signs of serious deterioration as evidenced by frequent leveee failures and increased maintenace costs. There is an urgent need to examine the flood control system on the Sacramento River to determine the measures required to restore it to a soundly constructed, cost effective system that will do the job. The California Water Commission is recommending an appropriation of $700,000.

Sacramento River, Chico Landing to Red Bluff

I also want to bring to the Subcommittee's attention a problem on the Sacramento River between Chico landing and Red Bluff near the intake facilities of the Glenn Colusa Irrigation District. A number of years ago, the state built a fish screen to protect the fishery from the pump station. But because of the meandering of the Sacramento River since then, the fish screen is now ineffective. The California Department of Fish and Game is prepared to rehabilitate the fish screen, but in order to have confidence that the screen will work, the river in this reach needs to be stabilized. The Glenn Colusa Irrigation District is requesting an appropriation of $250,000 to permit the Corps to participate in studies with respect to stabilizing the Sacramento River in this area.

Oceanside Harbor Breakwater

Last year as part of the Water Resources Development Act, Congress authorized a project to raise the Oceanside Harbor Breakwater. The modifications will correct a serious surge problem which has caused extensive property damage and threatens the safety of military, commercial and recreational boaters in the Oceanside Harbor. The breakwater improvements also will protect the Corps of Engineers $6 million investment in the Oceanside Sand Bypass System which is now unprotected in the mouth of the harbor. The Corps will complete the feasibility study for the Oceanside breakwater this year, but there are no funds in the budget to continue work in fiscal year 1988. An appropriation of $460,000 as sought by the City of Oceanside will permit the Corps to initiate and complete the planning and engineering design work for this project.

Mr. Chairman, I have mentioned merely a few projects which I believe warrant attention of this Subcommittee. Other witnesses this afternoon will mention equally meritorious projects. I urge the Subcommittee to give their requests careful and through consideration.

Thank you.

CALIFORNIA PORT AND NAVIGATION PROJECTS

STATEMENT OF ROBERT LANGNER, PRESIDENT, CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE

Senator COCHRAN. It is my understanding, Senator, that the first group of witnesses is going to be those that you refer to as C-MANC, the California Marine Affairs and Navigation Conference. Those ladies and gentlemen can come forward and begin this part of the hearing.

Mr. Langner, it is good to have you here today.

Mr. LANGNER. Thank you, Mr. Chairman. I am Robert Langner, president of C-MANC. I am appearing before this committee for the 29th consecutive year, Mr. Chairman. With a number of our people here, we will certainly make every effort to follow your admonitions and keep our testimonies to the very minimum.

We are pleased to come back for the 29th year and to present our recommendations which are appended to our statement. I hope that our full statement and the recommendations be a part of the record.

[The statement follows:]

STATEMENT OF ROBERT H. LANGNER, PRESIDENT, CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE

This witness continues with good fortune to have the privilege of appearing for the 29th consecutive year before this Committee, which in turn is a component of the 100th Congress.

Presented to you today as part of this brief testimony is a schedule of funding recommendations for certain California navigation, shoreline protection and related public works projects, which carry the unanimous endorsement and approval of the California Marine Affairs and Navigation Conference.

Joining in this presentation are a number of officers, directors and members of C-MANC, project sponsors and supporters, to present oral and written testimony or to be introduced.

Consistent with your request for brevity, these presentations will seek to minimize hearing time, and to this end, it is requested that written statements submitted be included as part of the record of these proceedings. Oral testimony will be limited to a brief summary of such statements -- with the assurance that these abbreviations will not reduce the consideration and value you give to written support and endorsements.

C-MANC supports fully the President's budget proposals for the fiscal year beginning October 1, 1987, providing for funding in the amount of $58,586,000 for 58 California projects, the ultimate Federal construction investment of which will be $325,195,000. For certain projects, however, representing less than 1/3rd of the total, modest additional funding is endorsed totaling $16.7 million -- of which $9.4 million consists of increased operations and maintenance costs. The bases for such increased funding will be the subject of statements and testimony subsequently submitted to the Committee today by our representatives.

C-MANC and its membership has followed closely and inputed to the dialogue of recent years which culminated in passage in the last days of the 99th Congress of the Water Resources Development Act of 1986. Recognized was the inevitability of cost-sharing. Our project sponsors have been responsive, consistent with the pioneering and innovative tradition of our State and the West. Following enactment of PL 99-622, the first application in the nation was the cost-sharing agreement between Port Hueneme on our south coast and the Department of the Army. Also to the south, the major ports of Los Angeles and Long Beach -- which together represent the greatest volume of ship traffic in the nation -- have indicated their willingness to bear their share of the deepening of the principal ship channels as provided by the new law. Also contemporarily, the shallow draft harbor of Santa Cruz was the recent scene of another "first" -- the transfer by the Corps of Engineers to the local agency of a dredge, upon the latter's assumption of full responsibility for all future channel maintenance dredging.

In the north, there are similar examples: Completion early this year of the Stockton portion of the San Francisco Bar, Bay and Delta System Deep Water Channel marked completion of the largest navigation undertaking in the State's history except for deepening through Pinole Shoal and Suisun Bay. Funding is also provided in the budget for major deepening of Oakland Outer and Inner Harbors and the Sacramento River Deep Draft Ship Channel. As noted in our recommendations, we urge combining the two Oakland projects. The innovative San Francisco Bay-Delta Model continues as a significant research and operational tool involving this extensive estuarine system.

C-MANC members have been unanimous also in their support each year for funding -- and again in our current recommendations, for $400,000 in excess of the funds requested in the President's budget -- to continue the special study of the Coast of California, Storm and Tidal Waves. Certainly, this area of engineering and knowledge cannot receive too much attention, research and development, which this study is designed to provide in terms of methodology and applications of ultimate benefit to the entire nation. Reflecting growing awareness of coastal and beach erosion problems -- and inadequacy of answers -- was devotion of the entire March-April, 1987 issue of **OCEANS -- The Journal of the Oceanic Society**. It is urged that this modest, incremental funding be included in the appropriations recommended by this Committee, as a sound and timely investment in enhancing our knowledge of the interface between the ocean and our coasts.

Reviewing the 28 earlier C-MANC statements submitted to you, it is tempting to dwell upon the dynamics of the Pacific Coast and of California in particular, our extraordinary growth rate, the enormous impact of the Pacific Basin on our economy and that of the entire nation, and a host of other statistics and superlatives. Certainly, the relevancy of our Customs receipts, ship movements, cargo tonnages and related indices continue to underline the need for harbor improvements, port investments and major capital expenditures in other needed infrastructure.

Such high levels of activity, growth and use extend also to needs in addition to commercial, deep draft navigation and coastal engineering. Water-related activities continue as the nation's most popular form of recreation and even more so in California -- with facility demands consistently in excess of those generally available. Harbors-of-refuge remain inadequate or nonexistent; demands placed on the fishing industry continue to grow well in excess of corresponding improvements in safe havens and bases.

Finally, the Pacific Coast role and those of Northern and Southern California specifically in national security and defense need not be described in detail, such is the importance of military logistics and missions served. Many of the projects described in the attached schedule of course equally accommodate military traffic as well as commerce.

Overall, with the commitments and investments entered into voluntarily by those responsible for projects within the state -- several of which are mentioned above -- and the leadership and foresight shown by this Committee and your predecessors, the picture looks brighter today than was the case in recent years. It is hoped that this record of understanding and achievement -- assuring adequate investment in America's future, its economic vitality, trade competitiveness and national security -- will be considered and maintained.

Thank you for this opportunity to appear once again before you, with the assurance that C-MANC will undoubtedly be back next year and in years to come to describe briefly our needs and aspirations, missions and achievements, and that this witness will continue to be among those so appearing.

C-MANC supports fully the President's Budget, and further, recommends additional funding of a limited number of projects.

(Amounts in Thousands)

Project	Total Cost C of E	Balance After FY 1986	FY 1987 Conference Allowance	FY 1988 Work Allowance	FY 88 C-MANC Recommendations President's Budget	FY 88 C-MANC Recommendations Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
POTENTIAL NEW NAVIGATION STUDIES							
Humboldt Harbor & Bay (Deepening)	330	330	0	0	0	330	Complete Recon Study
Newport Bay Harbor	300	300	0	0	0	300	Prepare Report Required by 1986 WRDA
North Coast of Los Angeles County	500	335	0	0	0	335	Complete Recon Study
Santa Cruz Harbor	320	320	0	0	0	320	Complete Recon Study
West Newport Beach Harbor	260	260	0	0	0	260	Complete Recon Study
NAVIGATION STUDIES IN PROGRESS							
Los Angeles-Long Beach Harbors	7,800	979	0	350	600	n/c	Continue Feasibility Study
Morro Bay Harbor	854	700	140	280	100	n/c	Initiate Feasibility Study
Oceanside Harbor	790	110	110	110	0	n/c	Funded for Completion
Redondo Beach Harbor (King Harbor)	730	236	200	200	36	n/c	Complete Feasibility Study
San Francisco Bay Area (In-Depth)	2,936	0	0	0	0	0	
Int #4 (Collection & Disposal of Debris)	(446)	(0)	(0)	(0)	(0)	(0)	Funded for Completion
San Francisco Bay Shoreline	4,280	1,682	840	840	600	n/c	Continue Feasibility Studies
Int #1 (S. Alameda & Santa Clara)	(2,045)	(365)	(120)	(245)	(120)	n/c	Complete Interim Feasibility Study
Int #2 (San Mateo & N. Alameda)	(1,360)	(664)	(440)	(440)	(224)	n/c	Complete Interim Feasibility Study
Int #3 (North Bay)	(760)	(613)	(280)	(155)	(256)	n/c	Continue Interim Feasibility Study
Int #[illegible] (Final)	(115)	(40)	(0)	(0)	(0)	(0)	
San Leandro Bay	890	840	0	0	0	375	Complete Recon Study
Santa Barbara Harbor	550	550	200	220	100	n/c	Initiate Feasibility Study
Sunset Harbor	1,830	925	250	250	0	675	Complete Feasibility Study
Ventura Marina (Review)	685	385	175	175	210	n/c	Complete Feasibility Study

(Amounts in Thousands)

FY 1988

Project	Total Cost C of E	Balance After FY 1986	FY 1987 Conference Allowance	FY 1987 ✓ Work Allowance	FY 88 C-MANC Recommendations President's Budget	FY 88 C-MANC Recommendations Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
POTENTIAL NEW SHORELINE PROTECTION STUDIES							
Ocean Beach	300	300	0	0	0	300	Complete Recon Study
Rancho Palos Verdes	250	250	0	0	0	250	Complete Recon Study
Santa Monica Breakwater	160	160	0	0	0	160	Complete Recon Study
SHORELINE PROTECTION STUDIES IN PROGRESS							
Point Mugu to San Pedro Breakwater	424	300	0	0	0	300	Complete Recon Study
SPECIAL STUDIES							
Coast of California, Storm & Tidal Waves	7,740	3,543	1,000	1,000	1,100	1,500	Continue Study of entire Coast of California
PRECONSTRUCTION ENGINEERING AND DESIGN							
Noyo River and Harbor (Breakwater)	5,800 (1,560)	(787)	(0)	(0)	(450)	n/c	Continue Design
Noyo River and Harbor (Channel Extension)	1,700 (580)	(130)	(0)	(0)	(130)	n/c	Complete Design
Oceanside Harbor	1,800 (460)	(460)	(0)	(0)	(0)	(460)	Initiate and Complete Design
Redondo Beach	3,000 (300)	(300)	(0)	(0)	(0)	(150)	Initiate Design

(Amounts in Thousands)

						FY 1988		
							FY 88 C-MANC Recommendations	
Project		Total Cost C of E	Balance After FY 1986	FY 1987 Conference Allowance	FY 1987 Work Allowance	President's Budget	Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
NEW CONSTRUCTION PROJECTS								
Newport Bay Harbor	(N)	3,150	3,150	0	0	0	1,500	Initiate Construction
Richmond Harbor	(N)	20,100	19,271	1,000	500	900	n/c	Initiate Construction
CONTINUING CONSTRUCTION PROJECTS								
Oakland Outer and Inner Harbors	(N)	34,100	33,551	1,915	915	10,300	n/c	Continue Harbor Channels Dredging
Port San Luis	(N)	11,600	10,710	0	0	0	500	Complete Design
Sacramento River Deep Water Ship Channel	(N)	39,500	38,647	3,600	1,600	11,000	n/c	Continue Construction
San Francisco Bay to Stockton (John F. Baldwin & Stockton Ship Channels)	(N)	132,000	84,544	3,900	3,900	2,700	n/c	Initiate and complete Venice Cut Fish and Wildlife Facilities, initiate and complete wavewash protection, and continue design for Phase 3
Imperial Beach	(BE)	3,340	0	0	0	0	0	No requirement pending resolution of litigation
Surfside-Sunset & Newport Beach	(BE)	29,300	19,578	0	0	0	0	No current requirement for periodic nourishment
SMALL CONTINUING AUTHORITIES								
Channel Islands Harbor	(N)	250	250	0	0	0	250	Complete Recon Study (50) and Definite Project Report (200)

(Amounts in Thousands)

Project	FY 86 Obligations	FY 1987 Estimated Obligations	FY 1988		Purpose of Funding
			FY 88 C-MANC Recommendations		
			President's Budget	Additional Total Recommendations (When Greater than Budget)	
OPERATIONS AND MAINTENANCE PROJECTS					
Bodega Bay Harbor	27	0	0	0	No maintenance required
Channel Islands Harbor	249	3,176	0	300	Repair North Jetty
Crescent City Harbor	5,055	1,195	1,150	1,300	Dredging and Monitor Breakwater Repairs
Dana Point Harbor	5	0	0	0	No maintenance required
Halfmoon Bay Harbor	17	0	0	0	No maintenance required
Humboldt Harbor and Bay	4,288	1,451	2,322	4,200	Dredging and Breakwater Repairs
Jack R. Maltester Channel (San Leandro Marina)	0	0	0	0	No maintenance required
Los Angeles - Long Beach Harbors	1,489	224	0	1,500	Dredge Mouth of Los Angeles River
Los Angeles - Long Beach Harbors Model	290	1,300	1,345	n/c	Upgrade model to modern standards
Marina Del Rey	50	28	0	130	Bioassay and Engineering and Design
Morro Bay Harbor	123	1,925	60	n/c	No maintenance required
Moss Landing Harbor	26	649	30	n/c	No maintenance required
Napa River	0	0	1,658	n/c	Periodic Dredging
Newport Bay Harbor	0	0	0	0	No maintenance required
Noyo River and Harbor	598	148	418	1,000	Dredging, Jetty Repair, and 50% Federal share of disposal site preparation
Oakland Harbor	1,067	1,899	1,428	n/c	Dredging
Oceanside Harbor	938	10	705	n/c	Dredging
Oceanside Experimental Sand By-Pass System	4,123	2,879	3,965	n/c	Operation of Bypassing Plant; Construction of Phase Two Bypass System
Petaluma River	0	271	1,536	n/c	Dredge across flats
Port Hueneme	16	0	0	0	No maintenance required
Port San Luis	27	163	0	300	Breakwater Repair
Redondo Beach Harbor (King Harbor)	335	100	0	0	No maintenance required
Redwood City Harbor	0	0	0	400	Dredge 5 foot Recreation Channel
Richmond Harbor	1,084	787	1,954	n/c	Dredging

(Amounts in Thousands)

Project	FY 86 Obligations	FY 1988			Purpose of Funding
		FY 1987 Estimated Obligations	FY 88 C-MANC Recommendations		
			President's Budget	Additional Total Recommendations (When Greater than Budget)	
OPERATIONS AND MAINTENANCE PROJECTS					
Sacramento River					
Sacramento River (30 ft.)	1,706	3,048	560	n/c	Stone protection
Sacramento River (Shallow Draft)	126	63	77	n/c	Maintain lock
San Diego Harbor	120	60	0	3,500	Restore critical project depths
San Francisco Bay-Delta Model Structure	1,065	923	1,000	1,250	Annual maintenance and rehabilitate Visitor Center displays
San Francisco Harbor	1,593	1,897	2,545	n/c	Dredging
San Joaquin River	20	56	1,012	n/c	Dredging
San Pablo Bay and Mare Island Strait	1,977	971	3,077	n/c	Dredging
San Rafael Creek	945	177	0	0	No maintenance required
Santa Barbara Harbor	725	757	873	n/c	Dredging
Santa Cruz Harbor	1,001	203	230	n/c	Condition surveys of jetties
Suisun Bay Channel	3	657	913	n/c	Dredging
Suisun Channel	0	0	0	0	No maintenance required
Ventura Harbor	1,795	1,267	1,332	n/c	Dredging
Drift Removal (S.F. Harbor and Bay)	964	1,420	1,570	2,000	Repair debris dock

SAN FRANCISCO TO STOCKTON SHIP CHANNEL, CALIF.

Mr. **LANGNER**. Before calling our first witness, I would like to have included in the record the statement of Paul Hughey regarding the San Francisco toStockton ship channel.

[The statement follows:]

Statement of the Coalition of Labor and Business for Alameda, Contra Costa and Solano Counties, Calif.

SUMMARY

	Requested Amount Fiscal Year 1988	
Project	President's Budget	Purpose of Funding
San Francisco Bay to Stockton Ship Channel (John F. Baldwin and Stockton Ship Channels)	$2,700,000	1) Continue hydrological studies of hydraulic salinity barrier for Baldwin Channel on Bay and Delta Model and continue design of Phase 3. Initiate and complete Venice Cut Fish and Wildlife Facilities. Initiate and complete wavewash protection.

My name is Paul F. Hughey. I am the Executive Director of the Coalition of Labor and Business for Alameda, Contra Costa and Solano Counties, California.

My organization would like to express our appreciation for the continued appropriations the Committee has provided to enable proper planning, design and construction for the San Francisco to Stockton Ship Channel improvement project. This very important improvement is vital to the long range economic viability of the large area it serves. We also greatly appreciate the manner in which the Corps of Engineers is carefully considering the environmental impact of this project within the guidelines provided by the Congress. We approve of the careful analysis of environmental, economic and social factors as they relate to this project and we will cooperate fully in providing any information or assistance the Corps may require to enable proper judgment in initiating further phases of construction.

Background

A brief was filed with the Corps of Engineers in 1958, requesting a study of the feasibility of improving the main shipping channel between San Francisco and the Port of Stockton. As a result, the study was funded by the Congress under an appropriation sponsored by the late Congressman John F. Baldwin. This project, described in House Document No. 208 of the 89th Congress, 1st Session, was authorized and approved by the Congress in September 1965. As a part of this project, the San Francisco Bar has been deepened from 50' to 55' and the main shipping channel into San Francisco Bay widened. Some minor additional construction was also provided near the Port of Richmond and on the levee system of the upper San Joaquin River.

In order to expedite work on portions of this overall project, the project was divided into five phases or sections. Commencing at the entrance to San Francisco Bay, Phase 1, the widening and deepening of the San Francisco Bar to 55' has been completed.

Phase 2 consisted of deepening the Southampton Shoals Channel from 35' to 45' for a distance of approximately three miles to connect the naturally deep waters of San Francisco Bay and West San Pablo Bay. This phase has been completed. It provides the vitally needed deeper channel to the Port of Richmond which has placed its first container berth in operation, and a better approach to the Chevron, USA, Richmond Refinery wharf. Construction was completed on this phase in Fiscal Year 87.

Phases 3 and 4, remaining to be completed, consist of deepening the existing 36' channel through San Pablo Bay to 45' and the lower Suisun Bay 35' Channel to 45'. These two channels are separated by the 8 mile long Carquinez Strait which is very deep and requires no dredging. Corps model studies indicate that Phase 3 will induce about a 5% increase in salinity levels in the Delta. Therefore, the Corps is conducting engineering and model studies on various types of underwater salinity barriers or sills in the Carquinez Strait to mitigate the effects of this phase in order to maintain or improve water quality in the Delta.

Phase 5 consisted of deepening the Stockton Ship Channel and upper Suisun Bay Channel from the existing depth of 30' to 35' from Point Edith, upstream of Martinez, to the Port of Stockton. Construction commenced on this phase in October 1982, and was completed in Fiscal Year 87.

The Economy

The San Francisco Bay is known throughout the world as one of the world's great harbors. In 1984, the latest year for which Corps of Engineers figures are available, some 50 million tons of cargo passed through the Golden Gate. Almost two thirds of this total passed over the public and private docks of Contra Costa County and Solano County via the existing John F. Baldwin Ship Channel, Phases 3 and 4.

Five of the six petroleum refineries in Northern California, representing some 800,000 barrels per day of throughput, lie on this channel. Also on this channel is the world's largest sugar refinery, C&H at Crockett, importing almost 1 million tons of raw sugar each year; a major steel plant; chemical plants; paper mills; a gypsum plant; expanding general cargo facilities; and major electric power generating plants of the Pacific Gas and Electric Company which are partially dependent upon shipment of fuel oil at various times.

Also served by this channel are three important naval installations: the Naval Fuel Supply Depot at Point Molate, near Richmond; the U.S. Naval Shipyard (a Nuclear Submarine repair facility) at Mare Island, Vallejo; and the U.S. Naval Weapons Station at Concord, which is shifting to containerization and which will require a deeper channel. The importance of a safe and adequate shipping channel to our Navy is obvious. It might be noted that the Corps does not include national defense installations in computing the cost-benefit ratio of projects.

Mr. Chairman, given the present balance of payment problems, it would seem obvious that everything possible should be done to reduce transportation costs and improve efficiency, while minimizing environmental impacts.

In 1984, some 1,000 tankers entered San Francisco Bay. Over 220 of these vessels had a draft of 35' or more which is the present dock side depth of all of the petroleum refineries and terminals on the channel. These vessels have to anchor in South San Francisco Bay and have a portion of their cargo lightered off before they can proceed partially loaded to the refinery or terminal docks. This is an environmentally unsound practice, since it is known that the greatest risk of oil spillage occurs when it is necessary to transfer cargo. A deepening of the channel would enable these ships to proceed directly to their docks, thereby reducing time and transportation costs and reducing environmental hazard.

Conclusion

Mr. Chairman, the long-range viability of the San Francisco Bay Area regional economy is dependent upon the completion of this project. The last significant improvements to this main shipping channel were completed in the 1930's. The world shipping fleet has changed dramatically since that time. The ships are much larger in every respect and unless this channel is improved, the region cannot remain competitive, to the detriment of our nation. Given the importance of international trade, the balance of payments and the very large sums collected in customs receipts by the San Francisco District each year, true national interests are involved.

We request the Committee to appropriate the amount of $2,700,000 to enable this project to proceed expeditiously.

Mr. Chairman, we thank the Committee for its attention to our concerns. Thank you.

VENTURA MARINA REVIEW, CALIFORNIA

STATEMENT OF RICHARD PARSONS, VICE CHAIRMAN, C-MANC BOARD, AND GENERAL MANAGER, VENTURA PORT DISTRICT

Mr. LANGNER. Now, we have some persons here with brief statements to summarize verbally, starting with our acting chairman of the California Marine Affairs and Navigation Conference, Richard Parsons, general manager of Ventura Port District.

Senator COCHRAN. Mr. Parsons?

Mr. PARSONS. Mr. Chairman, on behalf of the California Marine Affairs and Navigation Conference, I want to thank you for the time you set aside today to hear from our membership on navigation projects of vital interest to our state.

I also want to express our appreciation for your committee's and the Congress' past support of our navigation projects.

Just briefly, I want to mention that I have submitted for the record a statement supporting two vital projects for the Ventura Port District.

Thank you.

[The statement follows:]

STATEMENT OF THE VENTURA PORT DISTRICT

Ventura Harbor is located along the Southern California coastline in the City of San Buenaventura, some 30 miles downcoast from Santa Barbara, and approximately 60 miles northwest of the City of Los Angeles. Ventura Harbor became operational in 1963, and it soon became evident that the Harbor was plagued with a serious entrance problem. In May 1968, the Ventura Harbor became a Federally approved project committing the U. S. Army Corps of Engineers to provide maintenance dredging and a solution to the entrance problem. A detached breakwater and sand trap area completed by the Corps of Engineers in 1972 alleviated some of the more damaging difficulties but continuing navigational problems persisted. Additionally, the need for annual maintenance dredging continued, and the Corps of Engineers and the Ventura Port District have conducted maintenance dredging of the Harbor entrance within the limits of their jurisdiction from 1968 through the present time.

In recent years an aggressive development program has resulted in many new facilities, and others that are either under construction or are scheduled for start in the very near future. These include an extensive commercial facility, primarily oriented to the commercial fishing industry and the servicing of the offshore oil industry. The total investment for these improvements is approximately $30 million, with $1,300,000 being funded by the Economic Development Agency. In addition, the headquarters for the Channel Islands National Park has been completed, and large numbers of the public are enjoying the displays and programs of the National Park Service. A 225 room resort hotel complex was completed in 1984 at a cost of approximately $27 million, and a second 400 room hotel and conference center should begin construction within twelve months.

All of the operations of the Harbor, particularly those related to commercial fishing and the support boats for the oil industry, are highly dependent upon a navigationally adequate entrance to the Harbor. It is therefore respectfully requested that the Congress support the Army Corps of Engineers FY88 Civil Works Budget request of $1,332,000 for the maintenance dredging of the Ventura Harbor entrance channel. The area of Corps of Engineers responsibility is illustrated in Photo No. 1.

The U. S. Army Corps of Engineers has just completed the reconnaissance phase of an authorized review study of the continuing navigational problems associated with the Ventura Harbor entrance. Photo No. 2 illustrates the study area. The deficiencies associated with the existing federal improvements at the Harbor entrance result in the periodic shoaling of the entrance channel which can in extreme instances lead to the complete closure of the Harbor, but much more regularly causes the development of dangerous wave conditions during the winter storm months. This situation is a hazard to navigation which limits Harbor growth and development, reduces commerce, increases maintenance costs, and disrupts the local environment.

The Army Corps of Engineers FY88 Civil Works Budget Request includes $210,000 for the continuation of the feasibility phase of this ongoing navigation study. The Ventura Port District urges the Congress to support that request.

OCEANSIDE HARBOR BREAKWATER AND SAND BYPASS SYSTEM

STATEMENT OF LARRY BAGLEY, MAYOR, OCEANSIDE, CALIF.

Senator COCHRAN. We have Mayor Larry Bagley, city of Oceanside.

Mr. BAGLEY. Thank you, Mr. Chairman.

We have submitted written testimony on this. All of our projects, with the exception of one, are in the President's budget, and I would like to speak to one of those and slightly to another.

By way of background, Oceanside Harbor is used by military, commercial, and recreational vessels, and supports numerous commercial establishments. This harbor is the only point of refuge between Dana Point and San Diego and is home base for the Coast Guard cutter *Point Hobart*. As such, the harbor is not only important to the city of Oceanside, but also to the southern coast of California.

The Corps of Engineers is nearing completion of a study of the harbor breakwater. Modifications of the breakwater are critically needed to provide for public safety and protect against further property damage.

Over the past 13 years, 10 people have died in boating accidents at the breakwater, with total damages of over $4 million.

I urge your support for a $460,000 appropriation to move to the next phase of improving the harbor breakwater. These funds will be sufficient to complete all preconstruction work on this project.

In addition, the city urges your support of the administration's request of $705,000 for maintenance dredging and to continue to the next phase of the sand bypass system.

I have submitted statements on each of these and I would like to touch slightly on one other project associated with the water development. That is the San Luis Rey.

We are in the President's budget for $8.5 million for phase 2 of this project. I would like to report that pursuant to Congress' express intention in the Clean Water Act, these projects be reduced in cost wherever possible.

We have been working with the Corps of Engineers, with Fish and Wildlife Service, and with the property owners, and we feel at this point we have a good opportunity for cost reduction on this project and complete cooperation. With the continued appropriation we would do this.

We thank you very much for your consideration.

[The statements follow:]

STATEMENT OF OCEANSIDE, CALIF.

The city of Oceanside, Calif., is grateful for the committee's continuing support for the Oceanside experimental sand bypass system. The administration has proposed an appropriation of $3,965,000 in fiscal year 1988 for operation/monitoring of the phase 1 plant and construction of phase 2 of the sand bypass system.

The technology developed at Oceanside Harbor has the potential for revolutionizing harbor maintenance procedures and reducing federal dredging costs nationwide.

The city of Oceanside is proud to continue in its partnership with the federal government in implementing this important project

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STATEMENT OF THE OCEANSIDE HARBOR DISTRICT, OCEANSIDE, CALIF.

OCEANSIDE HARBOR BREAKWATER

The Oceanside Harbor District, city of Oceanside, Calif., respectfully requests that the U.S. Congress appropriate $460,000 in fiscal year 1988 to fund preconstruction engineering and design, including plans and specifications, for the Oceanside Harbor breakwater modifications project.

These modifications will correct the serious surge problem which causes extensive property damage within the harbor and threatens the safety of both military, commercial, and recreational boaters. Surge-generated waves in the harbor frequently exceed the 1.5-foot standard (surge has reached heights of 6 to 8 feet) suggested by the Waterways Experiment Station. This problem is particularly critical for the commercial vessels which use Oceanside Harbor as a home port on a year-round basis, and must rely on a safe port of refuge for their livelihood. We are currently expending over $5 million of public funds to rehabilitate the docking system and shoreline protection within the harbor. Without correction of the breakwater defects, the lifespan of these improvements will be cut in half.

The requested improvements will also protect the U.S. Army Corps of Engineers' $6 million investment in the experimental sand bypass system, which sits completely unprotected in the mouth of the harbor.

In addition to commercial fishing facilities, the Oceanside Harbor also supports numerous commercial establishments, which rely on the safety and adequacy of boating facilities for their economic well-being. Oceanside Harbor is also the only port of refuge between Dana Point and San Diego, and is home base for the Coast Guard cutter *Point Hobart*. U.S. Navy vessels entering the USMC Camp Pendleton boat basin pass through the same breakwater entrance as boaters entering Ocoeanside Harbor.

These breakwater modifications, which are for navigation safety reasons and the prevention of wave-induced damage, are appropriate for federal involvement. The harbor district is willing to provide our fair share of project cost and requests that the U.S. Army Corps of Engineers, Civil Works Division, be directed to proceed with the project.

I urge your support to ensure that Oceanside Harbor and USMC Camp Pendleton boat basin have a safe entrance by 1990.

OCEANSIDE HARBOR MAINTENANCE DREDGING

The Oceanside Harbor District, city of Oceanside, Calif., urges your support of the administration's proposed appropriation of $705,000 for maintenance dredging of the Oceanside Harbor entrance. This project is required to alleviate inner-harbor surge generated from shoaling at the harbor entrance and in preparation for the testing/operation of the Oceanside experiment sand bypass system.

Oceanside Harbor serves as the entrance to USMC Camp Pendleton for military vessels and provides berthing for the Coast Guard cutter *Point Hobart*. More than one-quarter of harbor traffic is commercial fishing boats or military vessels. Without your support, many of the harbors of refuge which cannot support their dredging requirements, such as Oceanside, would be jeopardized.

I urge your support for continued federal funding of maintenance dredging projects for small craft harbors and harbors of refuge.

These requests are submitted on behalf of the Oceanside Harbor District and its governing body, the city council of the city of Oceanside, sitting as the harbor district board of directors.

PORTS OF LOS ANGELES AND LONG BEACH, CALIF.

STATEMENT OF HON. GLENN M. ANDERSON, U.S. REPRESENTATIVE FROM CALIFORNIA

Senator COCHRAN. If I could interrupt at this point so we can take, out of order, Congressman Glenn M. Anderson, who has come from the other side of the Capitol.

We welcome you to this subcommittee and welcome any statement that you might have.

Mr. ANDERSON. Thank you, Mr. Chairman and your fellow committeeman there, a young fellow from my district almost.

Senator WILSON. Give him anything he wants.

Mr. ANDERSON. Mr. Chairman, members of the committee, it is a pleasure to appear before you, and I believe that the members of this subcommittee know how important these water projects are to this country's economic well-being, particularly those in the southern California area, the focus of a huge percent of west coast foreign trade.

I respectfully ask the members of this subcommittee to provide the necessary funding for the following projects. These first three that I mention are in my district.

First, the Los Angeles and Long Beach Harbor 2020 master plan feasibility study. I believe it is essential that the subcommittee approve the administration's $600,000 fiscal year 1988 request for the Corps of Engineers' feasibility study, which is the first step in the congressionally authorized long-range master port plan.

The feasibility study, which is strongly endorsed by the cities and ports of both Los Angeles and Long Beach, will determine the need for new channels, channel improvements, and deeper channels to accommodate the increased shipping.

As you may know, the 2020 master plan and its accompanying feasibility study is a response to the gigantic growth in the Pacific Rim trade, much of which passes in and out of the Los Angeles and Long Beach Ports.

These ports are not only considered the busiest ports in the nation, but they also provide the U.S. Treasury with billions of dollars in customs duties, taxes, and fees.

I believe the feasibility study is indispensible for the long-term viability of our country's two busiest ports, and I applaud the good work being done by both the Ports of Los Angeles and Long Beach in assisting the Corps of Engineers in the study by providing them with vital research data.

My second project is the San Pedro Bay model study. I ask that the subcommittee approve the administration's funding request of $1.24 million. That $1.25 million for the San Pedro Bay model study at Vicksburg, Miss.

This study will examine the impact of ship motion and tidal circulation upon the Ports of Los Angeles and Long Beach. It is imperative that changes in the tidal circulation and harbor channel flushing are examined to determine what the effect channel deepening and landfill expansion will have on water quality in the two ports as well as in the local vicinity.

The important Vicksburg model study is currently being upgraded by the Corps of Engineers from funds appropriated in fiscal year 1987. This upgrade is essential in order to provide data which will reflect accurate and modern physical and numerical modeling techniques, thereby enhancing the accuracy and reliability of resulting data.

I am convinced that without the full $1.25 million request for the San Pedro Bay model study, the Corps of Engineers data on the Ports of Los Angeles and Long Beach will be incomplete. As a result, sufficient and reliable information on long-range port development will simply be impossible.

The third project is the Los Angeles River dredging. I ask the subcommittee to appropriate the administration's $1,345,000 request for remedial maintenance dredging to remove accumulated silt on an annual basis from the Los Angeles River.

This accumulated silt creates serious restrictions and dangers to commercial and recreational boating activities in the Long Beach Harbor District. This dredged material could easily be used for filling scoured edges of the river channel, replacing sand on the beaches in Long Beach down the coast from the Los Angeles River, or creating new landfills in adjacent areas.

I strongly believe that an appropriation of $1,345,000 for the Los Angeles River dredging project would go a long way toward increased navigational passage for both commercial and recreational boats through the mouth of the Los Angeles River.

Mr. Chairman, as you can see, for fiscal year 1988 I am asking for a total of $3,169,000, as requested by the administration, to fund the three San Pedro Bay projects. During this same period, however, it is expected that the Ports of Los Angeles and Long Beach will generate approximately $2.5 billion a year in customs revenue for the Treasury.

If planned harbor improvement projects are allowed to proceed, the Ports of Los Angeles and Long Beach will generate over $6 billion a year in customs revenues by the year 2020. Needless to say, by any standard, these projects are a great federal investment.

They tell me that actually in the mid or late 1990's we will substantially increase the revenues at the port. We are raising now better than $2 billion a year. By the mid or late 1990's we will be raising $4 billion a year, and by the 2020's we will be up to $6 billion a year.

All you have to do is multiply 4 by 10 you have $40 billion dollars in just 10 years, that we are raising in those ports or will be if we do the job we are supposed to do for the U.S. Treasury. It is one of the best investments the federal government can make.

I have a couple of projects just outside my district, but they are close and we are involved in them.

UPPER NEWPORT BAY, CALIF.

One is the upper Newport Bay dredging, and I urge the subcommittee to appropriate $1.5 million for the dredging of Newport Bay. This project is necessary and needs a federal commitment in order to half the significant amount of silt accumulation in the bay.

This large silt buildup poses a great threat to one of California's largest saltwater preserves. I strongly believe that the $1.5 million dredging appropriation will not only protect this great saltwater preserve, but it will facilitate navigation and ancillary commercial activity in the bay in the process. That project I believe is in Congressman Badham's district.

KINGS HARBOR BREAKWATER, CALIFORNIA

My fifth one is King Harbor, and this is actually in Congressman Levine's district. I ask the subcomittee to support the administration's $36,000 request to complete King Harbor breakwater in Redondo Beach, Calif.

In addition, the Corps is prepared to move into the next phase of work and I ask the subcommittee to appropriate $150,000 for engineering and design work.

This vital project cannot be delayed because even minor storms threaten public safety and the $6.8 million in annual commercial activity in the harbor.

Finally, with respect to King Harbor, I ask that the subcommittee appropriate $300,000 for dredging purposes, of which the harbor is in desperate need of.

My sixth project is a little farther down to where your old home was, and that is the San Luis Rey River. This happens to be in Congressman Piker's district.

SAN LUIS REY RIVER, CALIF.

I ask the subcommittee to approve the $8.5 million request to continue constructing the San Luis Rey River flood control project, which will protect over 4,000 dwellings and 60 businesses, saving more than $100 million in the event of a major storm.

The San Luis Rey flood control project appropriation request also contains $705,000 to dredge the Oceanside Harbor, which I believe merits strong support from this committee.

Seventh is the Oceanside Harbor breakwater study. The Corps of Engineers is completing a study of the Oceanside Harbor breakwater. The deficiencies of the breakwater and jetties have resulted in 134 boating accidents, 49 serious injuries, 10 deaths, and nearly $4 million in property damage over the past 13 years.

The obvious need to protect against further injuries, deaths, and property damage warrants the addition of $464,000 to complete all preconstruction work on this project.

My final one is the Ventura Port District, and I also support the Army Corps of Engineers fiscal year 1988 civil works budget request of $210,000 for the continuation of the feasibility navigation study for the

Ventura Port District. I also support $1.3 million for maintenance dredging as well.

In closing, I wish to emphasize again how important I think it is to give the projects I have discussed the necessary funding levels that I have indicated.

The port and water projects that I have discussed today are not parochial or pork barrel in nature. On the contrary, they are projects that affect many lives and much of the economy of this country.

For this reason, I ask that the subcommittee provide the necessary appropriations within this context for the port and water projects I have outlined in my testimony today.

I would like to thank you, Mr. Chairman, and Senator Wilson, for allowing me to testify before you on what I consider to be a number of very important projects.

Senator COCHRAN. We appreciate your statement, Congressman.

Senator Wilson, do you have a comment?

Senator WILSON. Beyond the obvious, which is that Congressman Anderson has done his homework, and I think the point he makes with respect to a good investment with a very considerable return on the investment, it is one that I hope would be abundantly clear.

It occurred to me, Glenn, that perhaps we ought to think about some way to construct something akin to a percentage lease. That we might engage the federal government in a bargain, whereby we take a certain percentage of what we generate for them.

INTRODUCTION OF SUPPORTING WITNESSES

Mr. ANDERSON. I will support you if you figure that out, yes, because we are going to be making money for the federal government. I did make one little mistake. When I came in I was supposed to identify, from two of my cities, Long Beach and Los Angeles, I have some people here.

First, I have Evan Anderson Braude, our son, who is a city councilman for the city of Long Beach. He is back there somewhere; and E.D. Allen, George Talin, Dave Hauser, and Charles Connors with Long Beach Port.

For the city of Los Angeles, I have Jun Mori, the harbor commission president; Ira Distenfield; Robert Rados, the commissioner; E.Z. Burts, the executive director; Ed Gorman, chief harbor engineer; Burnie Evans, representing Councilwoman Flores; Earl Clark, the director of construction management; and Charles Gibson of the Los Angeles Harbor.

They are all here or were here a moment ago, to make sure that I said everything that I was supposed to say. I know what I said was right, because Senator Wilson, practically wrote this for me. [Laughter.]

Thank you.

SANTA BARBARA HARBOR, CALIF.

STATEMENT OF SHEILA LODGE, MAYOR, SANTA BARBARA, CALIF.

Mr. BAGLEY. Next, is Mayor Sheila Lodge of Santa Barbara.

Mayor LODGE. I should ask Senator Wilson to get on our side too. The proposed Corps of Engineers projects in our area, harbor dredging, for which federal costs have risen from $30,000 in 1935 to nearly $900,000 today. The feasibility study to determine ways to reduce those costs.

The Santa Barbara and Galleta stream studies and the storm and tidal wave studies are vital to the operation of our harbor, to flood control, beach preservation, and the protection of millions of dollars of property and thousands of jobs. Also, a very good investment.

We are very appreciative of your support of these projects in the past, and we hope that your support will continue. Thank you very much.

[The statement follows:]

STATEMENT OF SHEILA LODGE, MAYOR, SANTA BARBARA, CALIF.

My trip from Santa Barbara, Calif., to Washington, DC, is to demonstrate to you that the proposed appropriations for dredging and harbor protection studies are of great importance to the city of Santa Barbara.

The livelihood of several thousands of people is dependent upon Santa Barbara Harbor and the harbor is dependent upon annual dredging of the channel by the Corps of Engineers.

The relentless movement of sand down the coast makes the existence of the harbor dependent upon dredging. Each year we receive 200,000 to 800,000 cubic yards of sand. The harbor would close each winter if it were not for annual dredging. If we were to abandon the harbor and let the sand accumulate, it would starve the downcoast beaches creating major property damage plus untold loss of beach recreation.

There are two line items in the proposed budget we need. First is the $800,000 for annual dredging, and second, $100,000 to initiate the feasibility study to search for a long-range solution for reducing maintenance and enhancing protection. The Corps of Engineers is just now commencing the harbor protection reconnaissance study which is expected to take less than 12 months. We must preserve this momentum.

PORT OF REDWOOD CITY, CALIF.

STATEMENT OF GERALD CHANDLER, VICE MAYOR, REDWOOD CITY, CALIF.

Mr. BAGLEY. We have Vice Mayor Gerald Chandler, Redwood City.

Mr. CHANDLER. Mr. Chairman, Congress provides authorization for maintenance of a small boat recreation channel to accomodate our municipal marina and three others with 13,050 berths in place.

The channel, since 1936, has never had the benefit of ordinary maintenance, and we have requested funds for this maintenance dredging for over 10 years.

The Redwood City Port jurisdiction area includes the berthing and upland terminal for the former Glomar Explorer project continually used by Lockheed Space and Missile Corp. as a special research project for the U.S. Government.

It needs maintenance dredging for a required 20-foot depth. So, we respectfully request an appropriation for $400,000 to proceed with Port of Redwood City dredging operations.

Thank you very much.

[The statement follows:]

STATEMENT OF GERALD CHANDLER, VICE MAYOR, REDWOOD CITY, CALIF.

I am Gerald Chandler, vice mayor, city of Redwood City, Calif., and I am representing the Port of Redwood City.

As an important segment of the federal deep draft navigation project in the city of Redwood City, the project, as authorized by the Congress of the United States, provides for the maintenance of a small boat recreation channel to accommodate our municipal marina and three private marinas each dependent upon that portion of the federal project to provide adequate depths of water to accommodate the small boat recreational harbors located within the federal project boundaries. A total of 1,350 berths are in place in marinas developed along the course of the federal channel.

Since the authorized construction of the Redwood City Harbor and channel in 1936, the small craft channel has never had the benefit of ordinary maintenance. We have, over the past 10 years, requested funds to accomplish maintenance dredging in that portion of the channel constructed originally to accommodate recreational boating.

In addition to the public and private marinas bordering the federal channel, the area is the berthing and upland terminal for the former HBM-L Glomar Explorer project. The area is continually used by Lockheed Space and Missile Corp. as contractors for the U.S. Government in a special research project within the Port of Redwood City jurisdictional area. The Glomar Explorer project was originally built some 10 years ago, and it's continuing research requires maintenance dredging for a required 20-foot depth to accommodate the HMB-L. Such depth is required for transit and moorage of the barge, as well as maintenance of the small boat channel at a depth of 7 feet, mean low lower water.

In view of the lack of maintenance of the recreational channel, and the effect upon the public and private marinas adjacent thereto, we respectfully request that the Congress appropriate funds in the amount of $400,000 and authorize the district engineer, San Francisco District, to proceed with dredging operations at the Port of Redwood City.

PORT SAN LUIS, CALIF.

STATEMENT OF GERARD PARSONS, COMMISSIONER, PORT OF SAN LUIS HARBOR DISTRICT

Mr. LANGNER. Gerard Parsons, commissioner of Port San Luis Harbor District.

Mr. PARSONS. Mr. Chairman, coastal waves from the 1982–83 storms created in excess of $30 million dollars in damages to public facilities and private property at Port San Luis.

The Congress appropriated $600,000 in fiscal year 1986 for the Corps studies of construction of breakwaters to protect Port San Luis. To date, only a portion of these federal funds have been released for the reconnaissance studies.

We request that Congress direct the Corps to insure that the balance of these funds be released as required for the feasibility studies and to be applied toward construction.

Thank you very much, gentlemen.

[The statement follows:]

STATEMENT OF GERARD PARSONS, VICE PRESIDENT, BOARD OF COMMISSIONERS, PORT OF SAN LUIS HARBOR DISTRICT

Coastal waves from the 1982–83 storms created in excess of $30 million in damages to public facilities and private property at Port San Luis.

The Congress appropriated $600,000 in fiscal year 1986 for Corps studies of construction of breakwaters to protect Port San Luis. To date, only a portion of these federal funds have been released for their reconnaissance studies.

We request that Congress direct the Corps to insure that the balance of these funds be released, as required, for the feasibility studies and to be applied toward construction.

LOS ANGELES-LONG BEACH HARBORS STUDY

STATEMENT OF EVAN BRAUDE, COUNCILMAN, LONG BEACH, CALIF.

Mr. BAGLEY. Next, we have Councilman Braude of Long Beach.

Mr. BRAUDE. Mr. Chairman and Senator Wilson, the Ports of Los Angeles and Long Beach combine to make the largest commercial port complexes in the United States and they are still growing.

These two ports in cooperation with the Corps of Engineers are developing the long-range master plan that my father mentioned before. It is known as the 2020 plan. It is requested that the committee approve the administration's budget of $600,000 for those vital feasibilities to continue.

As reauthorized in 1976, the Corps of Engineers currently maintains an hydraulic model of San Pedro Bay. That model assures that any future port development will safely and economically berth ships, while having a minimal adverse impact on the environment.

This model is currently in desperate need of upgrading, as was mentioned earlier. The city and Port of Long Beach also require federal funding for remedial maintenance dredging at the mouth of the Los Angeles River. The impact of accumulated flood deposited silt entering the San Pedro Bay area are serious navigational hazardous to commerical boating activity in the harbor.

To achieve the greatest economy of funds these silt deposits should be removed on an annual basis as a scheduled item of work. That amount the Corps of Engineers estimates is about $1.5 million.

The Port of Long Beach has filed with the committee testimony and resolutions which provide details about the three projects, and the Ports of Long Beach and Los Angeles are an important resource for the economy of the entire United States and provide many benefits to local and federal agencies.

It is important that these ports continue to develop to meet the needs of the future and be able to maintain safe and economic navigation channels.

I thank you, Mr. Chairman and Senator Wilson.

[The statement follows:]

STATEMENT OF E.D. ALLEN, DIRECTOR OF ENGINEERING, DESIGN AND DEVELOPMENT, PORT OF LONG BEACH, CALIF.

I am E. D. Allen, Director of Engineering, Design and Development for the Port of Long Beach, California. I have been authorized by the Board of Harbor Commissioners of the City of Long Beach to represent the Port of Long Beach in regard to appropriations for the Los Angeles-Long Beach Harbors Study, the Los Angeles and Long Beach Harbors Model Study programs, and for remedial maintenance dredging in the mouth of the Los Angeles River. Before I continue, I want to commend and congratulate Congress on its 1986 Water Resources Development Act. It provides clear and understandable direction for the intent of Congress and should expedite the many vital projects involved.

The Ports of Long Beach and Los Angeles, in cooperation with the Corps of Engineers, have developed a long-range master plan, referred to as the "2020 Plan", which demonstrates the need for new navigation channels and additional landfill development. This document is a product of the Los Angeles-Long Beach Harbors Study for future channels and landfill development, which has been in process since 1964 by the U. S. Army Corps of Engineers. The Water Resources Development Act of 1986 authorizes construction of this master plan project upon completion of a favorable Chief's Report. The first step in this process is a feasibility report, which is already in progress. The Ports and the Corps wish to continue this feasibility report, including physical and numerical model testing and other studies needed for the permitting process. It is therefore urged that the Committee approve an appropriation of $600,000 for fiscal year 1988 to continue this study.

The Water Resources Development Act of 1976, Section 123, authorized the Chief of Engineers to operate and maintain the Los Angeles-Long Beach Harbor Hydraulic Model at the U.S. Army Waterways Experiment Station in Vicksburg, Mississippi, as part of the Los Angeles and Long Beach Harbors Model Study. In the President's budget for fiscal year 1987, $1,345,000 was included and the funds have been appropriated to upgrade that model, including accumulating data on tidal circulation, wave energy, and ship motion in the San Pedro Bay area. This model study is absolutely essential to satisfy regulatory agency requirements and to plan and engineer the expansion of the Port complex and associated navigation channels, as detailed in the Port's "2020 Master Plan." The Corps of Engineers advises this study must be consecutively funded for several more years if useful results are to be obtained. Therefore, Congress is respectfully requested to appropriate $1,345,000 for fiscal year 1988 to continue this modeling study.

The Port of Long Beach also concurs with and supports the recommendation of the California Marine Affairs and Navigation Conference and the City of Long Beach on federal funding for remedial maintenance dredging to remove accumulated flood-deposited silt in the mouth of the Los Angeles River. These silt deposits create serious restrictions and hazards to commercial and recreational boating activity in and adjacent to the Long Beach Harbor District. In addition, the Port recommends that these silt deposits be removed, preferably on an annual basis, or at least on a biennial basis as a scheduled item of work. The dredged material should be used for filling scoured edges of the river channel, replacement of the sand on the beaches in Long Beach down the coast from the Los Angeles River, or creation of new landfills in adjacent areas. The replacement is necessary because of the interruption of the normal littoral processes by the flood control channel and the influence of the federal breakwater on normal wave action, which create a reduction in sand movement and serious beach erosion under certain storm conditions. It is estimated that the annual rate of siltation is approximately 200,000 to 300,000 cubic yards and is influenced by operational decisions at the Corps of Engineers' Hansen Dam located at the headwaters of the river. It is imperative, in our opinion, that a more assured long-range remedy be found for the Los Angeles River mouth if navigational utility is to be maintained. House Document 843, 76th Congress, 3rd Session, delegated this maintenance responsibility to the Corps. In order to make dredging operations more cost effective, it is recommended that the existing design elevation be lowered to a depth of -30 ft., and that a scheduled program be established to monitor water depths in the River to insure an operational depth of -20 ft. These actions will allow the Corps to initiate maintenance activities in a more timely and economically feasible manner before the channel becomes completely closed to navigation on one side and excessive scour occurs on the other side. The City and the Port believe that these modifications, as well as an explicit annual maintenance dredging and beach replenishment project would provide such a long-range solution to the siltation problem from the Los Angeles River. It is currently estimated that an annual appropriation of $1,500,000 would fund this most essential remedial project. Congress is therefore respectfully requested to appropriate this $1,500,000 for fiscal year 1988.

Attached hereto is Resolution No. HD 1361, adopted by the Board of Harbor Commissioners of the City of Long Beach on March 16, 1987 and Resolution No. C-24346, adopted by the Long Beach City Council on March 10, 1987, both of which contain data relating to the background of the Los Angeles-Long Beach Harbors Study, hydraulic modeling, and other related matters, and which stress the need for federal assistance in developing economic, technical, and environmental background information essential to the design and permitting of Port facilities vital to regional and national interests.

Agencies benefiting from these projects in San Pedro Bay include, but are not limited to, the City of Long Beach, the Ports of Long Beach and Los Angeles, the County of Los Angeles, the State of California, the United States Navy and Coast Guard, U. S. Customs Service and other various state and federal environmental agencies.

Thank you for permitting me the privilege of this presentation.

RESOLUTION NO. HD-1361

A RESOLUTION OF THE BOARD OF HARBOR COMMISSIONERS OF THE CITY OF LONG BEACH, CALIFORNIA, REQUESTING THE CONGRESS OF THE UNITED STATES TO APPROPRIATE FUNDS TO CONTINUE THE LOS ANGELES-LONG BEACH HARBORS STUDY, TO CONTINUE THE LOS ANGELES AND LONG BEACH HARBORS MODEL STUDY PROGRAMS, BOTH RELATING TO IMPROVEMENTS IN SAN PEDRO BAY, AND FOR REMEDIAL MAINTENANCE DREDGING IN THE MOUTH OF THE LOS ANGELES RIVER, ALL BY THE UNITED STATES ARMY, CORPS OF ENGINEERS, AND MAKING A DETERMINATION RELATING THERETO.

WHEREAS, the Ports of Long Beach and Los Angeles in San Pedro Bay, California, are two of a limited number of sites on the West Coast of the United States which possess the potential for deep water ports as recommended in the West Coast Deep Water Port Facility Study conducted by the United State Army, Corps of Engineers; and

WHEREAS, the Ports of Long Beach and Los Angeles have a record of both physical and fiscal growth to the extent that together the two are presently handling over 108 million metric tons of cargo annually (on a fiscal year basis), which cargo is valued at over 50 billion dollars; and

WHEREAS, the growth and activity of the Ports of Long Beach and Los Angeles have a significant regional and national economic effect; and

WHEREAS, in excess of two billion dollars in federal revenues are derived annually through United States Customs duties on foreign imports passing through the Ports of Long Beach and Los Angeles; and

WHEREAS, both Ports are now, and are increasingly becoming, hard-pressed to provide facilities to meet the needs of the shipping industry, and to that end are conducting extensive studies, in conjunction with federal studies, to determine navigational, transportation, and environmental requirements necessary to provide economic and adequate surge-free berthing and cargo-handling facilities; and

WHEREAS, all existing land in the Port of Long Beach which can be developed for shipping operations has been utilized and to meet the needs of the following decade, the design, permitting and construction of new lands must commence immediately and

WHEREAS, continuation of the studies currently underway by the Corps of Engineers, consisting of the Los Angeles-Long Beach Harbors Study originally requested by the Committees on Public Works of both the House and the Senate, and the Los Angeles and Long Beach Harbors Model Study programs, including maintenance and operation of the San Pedro Bay Hydraulic Model at Vicksburg, Mississippi, as authorized by Section 123 of the Water Resources Development Act of 1976, is urgently needed for use in the design and permitting processes for future landfills for Port Development and

WHEREAS, it is necessary, as part of the Los Angeles and Long Beach Harbors Model Study, to upgrade existing hydraulic models to assure adequate water quality and surge free berthing, which includes obtaining long-term data on the hydraulic regime in San Pedro Bay by running a monitoring program using self-contained recording instruments to determine currents and energy entering the Bay; and

WHEREAS, the Los Angeles River is the largest of numerous flood-control channels constructed and maintained jointly by the Los Angeles County Flood Control District and the United States Army, Corps of Engineers, and silt deposit from heavy storm runoff in recent years accumulating in the mouth of the Los Angeles River between the City and the Port of Long Beach constitutes a restriction and hazard to both commercial and recreational boating; and

WHEREAS, the Board of Harbor Commissioners of the City of Long Beach, as a properly constituted and financially responsible local agency, by its Resolution No. HD-890, adopted August 3, 1965, expressed its intent to enter into such agreements as may be reasonably required to further federal projects for the development and improvement of Long Beach and Los Angeles Harbors; and

NOW, THEREFORE, the Board of Harbor Commissioners of the City of Long Beach resolves as follows:

1. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army, Corps of Engineers, to continue the Los Angeles-Long Beach Harbors Study.

2. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army, Corps of Engineers, to maintain the San Pedro Bay Hydraulic Model at the Waterways Experiment Station at Vicksburg, Mississippi, as part of the Los Angeles and Long Beach Harbors Model Study.

3. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army, Corps of Engineers, to continue the hydraulic monitoring program of San Pedro Bay to obtain prototype data and develop improved water quality and ship motion models, essential to long-range planning and design, also as part of the Los Angeles and Long Beach Harbors Model Study.

4. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army, Corps of Engineers, in conjunction with the Los Angeles County Flood Control District, to engage in the necessary maintenance dredging at the mouth of the Los Angeles River to remove silt deposits which have accumulated at that location.

5. That the Executive Director of the Long Beach Harbor Department be, and he is hereby, directed to send copies of this Resolution to the United States Senators and to Members of the House of Representatives from California, with a letter requesting their assistance in presenting this Resolution before the proper Congressional committees.

6. That the Executive Director of the Long Beach Harbor Department be, and he is hereby, further directed to send copies of this Resolution to the President of the United States; the Director, Office of Management and Budget; the Secretary of the Army; the Chief of Engineers, the Board of Engineers for Rivers and Harbors, the Division Engineer-San Francisco and the District Engineer-Los Angeles, all of the United States Army, Corps of Engineers; and to such other interested persons as he may deem appropriate.

The Secretary of the Board shall certify to the passage of this Resolution by the Board of Harbor Commissioners of the City of Long Beach, shall cause the same to be posted in three (3) conspicuous places in the City of Long Beach, and shall cause a certified copy of this Resolution to be filed forthwith with the City Clerk of the City of Long Beach and it shall thereupon take effect.

I hereby certify that the foregoing Resolution was adopted by the Board of Harbor Commissioners of the City of Long Beach at its meeting of March 16, 1987, by the following vote:

Ayes: Commissioners DuVall,Talin,Gray,Hauser

Noes: Commissioners None

Absent: Commissioners Langslet

Not Voting: Commissioners None

James H. Gray
Secretary

RESOLUTION NO. C- 24346

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LONG BEACH URGING THE CONGRESS OF THE UNITED STATES TO AUTHORIZE AND FUND THE ANNUAL DREDGING OF THE MOUTH OF THE LOS ANGELES RIVER

WHEREAS, the mouth of the Los Angeles River, which is the largest of the numerous flood control channels in Los Angeles County, is located within the city limits of the City of Long Beach; and

WHEREAS, due to heavy rainfall runoff, great quantities of silt and sediment are deposited at the mouth of the Los Angeles River and in the channel seaward thereof in Queensway Bay; and

WHEREAS, the annual rate of such siltation is approximately 200,000 to 300,000 cubic yards, and is influenced by operational decisions at the Corps of Engineers Hansen Dam situated at the headwaters of the Los Angeles River; and

WHEREAS, the City-owned Catalina Landing Facility, from which a private company operates daily scheduled passenger service to and from Catalina Island under a permit from the City, and the Golden Shore Small Boat Launching Facility which is owned and operated by the City for the launching of small boats, are both located at the mouth of the Los Angeles River; and

WHEREAS, said silt deposits create substantial hazards and cause serious problems and significantly restrict, limit and hinder the use of the navigable waters at the mouth of the Los Angeles River for commercial and recreational boating activities, especially for commercial transportation between Long Beach and Catalina Island; and

WHEREAS, the shoaling about the piers of the Queensway Bridge created by the silt deposits may affect the structural integrity of said bridge; and

WHEREAS, the maintenance dredging of the mouth of the Los Angeles River and the basins and channel seaward thereof in Queensway Bay is necessary so that said navigable water areas and the adjacent facilities may continue to be used safely and without danger of loss of life and property; and

WHEREAS, the maintenance dredging of the mouth of the Los Angeles River to insure continuation of safe navigation is within the jurisdiction of the United States Army, Corps of Engineers, and

WHEREAS, the accumulated silt deposits in the mouth of said river should be removed on an annual basis as a scheduled item of work for the Corps of Engineers; and

WHEREAS, due to funding limitations, such maintenance dredging has only been performed on an occasional basis by the Federal Government and navigational dredging responsibilities have thus been unnecessarily shifted to local government;

NOW, THEREFORE, the City Council of the City of Long Beach resolves as follows:

Section 1. The Congress of the United States is urged to appropriate approximately $1,400,000 for the United States Army, Corps of Engineers, to perform the necessary maintenance dredging at the mouth of the Los Angeles River and the basins and channel seaward thereof in Queensway Bay to remove deposits of silt and sediment which have accumulated at that location to lower the existing design elevation to a depth of minus thirty (30) feet mean low low water (MLLW).

Sec. 2. The Congress of the United States is requested to authorize and fund an annual maintenance dredging project for the mouth of the Los Angeles River by the Department of Army, Corps of Engineers in order to insure an operational depth of minus twenty (20) feet mean low low water (MLLW) and to provide a long range solution to this continuing situation and maintain navigational utility.

Sec. 3. The City Clerk is directed to send certified copies of this resolution to the United States Senators and the Members of the House of Representatives representing the Long Beach area; the Secretary of the Army; the Chief of Engineers of the Department of the Army; and to such other interested persons as may be deemed appropriate.

Sec. 4. The City Clerk shall certify to the passage of this resolution by the City Council of the City of Long Beach and it shall thereupon take effect.

I hereby certify that the foregoing resolution was adopted by the City Council of the City of Long Beach at its meeting of March 10, 1987, by the following vote:

Ayes: Councilmembers: Braude, Hall, Clark, Smith,
Grabinski, Harwood, Kell.

Noes: Councilmembers: None.
Absent: Councilmembers: Edgerton, Tuttle.

Shelba Powell
City Clerk

NEWPORT BEACH HARBOR, CALIF.

STATEMENT OF JOHN WOLTER, COOPERATIVE PROJECTS ENGINEER, NEWPORT BEACH, CALIF.

Mr. BAGLEY. John Wolter, cooperative projects engineer, city of Newport Beach.

Mr. WOLTER. Mr. Chairman and members of the committee, section 841 of the new Water Resources Act authorized the Corps of Engineers to perform a $3.5 million dredging project in Newport Bay.

The city of Newport Beach requests that $1.5 million for construction of the project be provided in the 1988 budget contingent on approval of a section 903(b) report which the city will prepare for submittal to the Corps and the Secretary of the Army.

This project is important and is the last phase of a dredging plan to remove sediment from the bay, which is now moving into the main navigational channel. Under terms of a cooperative agreement, local parties have completed 1.75 million yards of dredging at a cost of $8 million, and at this time there is an opportunity to save $2 million on the Corps' project.

The city has a project in progress right now to dredge 1 million yards of sediment at a cost of $5 million. If federal funds can be made available while our contractor is still working in the harbor, there will be a considerable savings because there will be no cost from mobilization and the favorable unit prices we have on our larger project will help provide for that savings.

In addition to that project, the city wishes to go on record and support a C–MANC's request for $1.5 million to continue the coast of California storm and tidal wave studies.

Thank you very much for your consideration.

OAKLAND INNER AND OUTER HARBOR CHANNELS

STATEMENT OF GERARD POPE, PORT OF OAKLAND, CALIF.

Mr. BAGLEY. Gerard Pope, Port of Oakland.

Mr. POPE. Thank you, Mr. Chairman and Senator Wilson.

I am appearing today on behalf of Walter Abernathy, executive director of the Port of Oakland, to ask for your support of the President's recommendation of $10.3 million appropriation for the continuing construction of the inner and outer Oakland channels.

We want to also thank you for your continuing support of this committee. We have submitted a written statement for the record.

Thank you.

[The statement follows:]

STATEMENT OF WALTER A. ABERNATHY, EXECUTIVE DIRECTOR, PORT OF OAKLAND, CALIF.

Mr. Chairman and members of the Committee, My name is Walter A. Abernathy. I am Executive Director of the Port of Oakland and I appreciate the opportunity of submitting this testimony on behalf of the Port of Oakland.

The Port of Oakland is an independent department of the City of Oakland and is entirely financially self-supporting. The Port's development of marine terminals and the private sector activities that take place because of those developments account for over 12,000 direct jobs.

The Oakland Navigation Improvement Project consists of two channel branches in Oakland, California - the Outer Harbor Channel and the Inner Harbor Channel.

The total first Federal costs for the Projects is estimated to be approximately $45 million and the Benefit/Cost ratio is determined to be about 5 to 1.

This project has been studied and reported on by the U.S. Army Corps of Engineers based on two separate study authorizations. A summary of the two Corps of Engineer reports is as follows:

The Port of Oakland, located on the mainland side of San Francisco Bay, has made optimum use of its strategic location and natural setting to interface its extensive and modern marine terminal facilities with the facilities of other modes of transportation. Close to the Port are interstate highways, freeways, railroad and trucking terminals. The port is served by two major railroads, a network of six main highways, 600 trucking companies and some 50 ocean shipping lines.

With the advent of containerized shipping in international trade in the late 1960's, the importance of convenient transfer between transport modes became critically important. Because of its geographical location, progressive management and inland transportation network, Oakland has developed into a major world containerport.

Oakland marine terminals complex consists of 28 berths, of which 18 are modern facilities dedicated to container operations and these facilities represent a local investment of over $165 million in public funds. All of the terminals are presently accessed by an historical federal ship channel system consisting of the Bar Channel, the Outer Harbor Channel, and the Inner Harbor Channel. The channels are currently improved to a depth of -35 feet. The depth was designed in the 1940's before the introduction of containerization and when the vessels were drawing about 25-feet draft of water. Today, four decades later, the containerships calling at Oakland are longer, wider and of deeper draft, drawing 39 feet of water. A minimum of 42 feet of water depth is needed to permit these modern ships to navigate safely into and out of port. All of the major global container lines as well as the U.S. Flag lines of Sea-Land, American President Lines, U.S. Lines and Matson serving Oakland have updated or retrofitted their fleets to the newer fourth generation ships. The justifications are readily apparent. The larger fourth generation containerships provide the shipping lines a competitive edge due to the economy of their scale-of-operation. Such ships can deliver a container across the Pacific using only a third of the amount of fuel consumed by the earlier vessels.

To illustrate the importance of this appropriation, we wish to describe the Port of Oakland's impacts. In 1985, the Port of Oakland handled almost 13 million revenue tons of general cargoes — 90% or almost 12 million tons of which were containerized cargoes. In 1985, the Port of Oakland accounted for almost 95% of all container cargoes passing through the Golden Gate. The historical export orientation of the Port has continued with the development of containerization. Oakland is the leading export port on the Pacific Coast and is the last port of call for many lines. During a typical month, over 40 container vessels sail directly from Oakland to overseas destinations.

The Port of Oakland, whose total value of export general cargo is estimated to approximate $5.3 billion, contributes positively and significantly to the United States balance of trade. We further estimate that this port generates almost $300 million in customs revenues and taxes paid to the U.S. treasury. Adequate channel depths are essential to the Port's continued ability to contribute positively to the nation's economic and financial well-being, as well as to our local community.

As a last port-of-call, container vessels sailing from Oakland with a wide variety of manufactured and agricultural exports, attempt to load to full cargo capacity and with maximum fuel. By nature, exports from the United States tend to have a greater density than lighter weight, higher cube import cargoes. New containership designs, coupled with the desirability of maximum loading, require that channel depths of 42 feet at mean lower low water to be provided as an absolute minimum. The high cost of modern containership operation does not permit vessels to wait for high tide conditions. Sailing delays necessitate increased speed and high fuel consumption at sea if schedules are to be maintained.

Employment Impacts

The Inner Harbor and Outer Harbor Channel Improvement Projects will form a key link in a multifacated Port facility enhancement program, the majority of which will be financed through Port of Oakland revenues and private enterprise investments. Port investments in improved container cranes, wharves, container yards, railroads, streets and intermodal transfer facilities will complement the channel improvements and create an integrated system which utilizes each component to the greatest efficiency.

Implementation of these related infrastructure improvements will increase the Port of Oakland's ability to fulfill its important national role as an export oriented port. Important local employment benefits will also result. It is expected that local area jobs directly related to Port activities will increase from the current 12,000 to about 23,000 by 1995, in addition to 240 construction related jobs. Local area salaries and wages are expected to increase by $207 million per year and local tax revenues by $1.7 million.

The Port of Oakland is prepared to fulfill without delay its role as the project's local sponsor. Negotiation of a Local Cooperative Agreement is nearing completion, with final approval expected by June, 1987.

The Port has already guaranteed the necessary local financial support by encumbering $22 million of its own funds for the project under its Capital Improvements Program. Furthermore, in order to expedite project construction, the Port has already begun preliminary work on project related work including an authorized under-channel sewer relocation and dredging of berths to match future adjacent channel depths.

As stated above, the Port of Oakland will be completing the Local Cooperation Agreement and the Oakland Channel improvement project is now ready to proceed to the active deepening phase. The FY 1988 budgetary recommendations for the continuing construction of this project are budgeted at $10,300,000. We respectfully urge approval of this appropriation by this committee. This approval will permit us to keep pace with the technology of larger deeper draft ships that are here now and which will be more adequately served by the improved Channels when constructed.

In concluding my remarks I again want to express the appreciation of this Port for the efforts of this committee for providing the necessary funding over the past several years that has permitted this project to proceed.

SACRAMENTO DEEP WATER SHIP CHANNEL

STATEMENT OF FRANK C. BOERGER, CONSULTANT, GOLDEN GATE PORTS ASSOCIATION, REDWOOD CITY, CALIF.

Mr. BAGLEY. The Golden Gate Ports Association's consulting engineer, Frank Boerger.

Mr. BOERGER. Mr. Chairman and Senator Wilson, it is a pleasure to be here today.

Golden Gate Ports Association is a new name for an old organization that comprises the six public ports served through the Golden Gate. In this cooperative organization, these competing ports are pulled together to support one another in order to maintain adequate throughput capacity in the bay delta area.

I have submitted a written testimony to you, which I would like have be made part of the record, and merely say that we are urging the continuation of the projects that are so important to our area, that are in the President's budget.

Thank you.

[The statement follows:]

STATEMENT OF THE GOLDEN GATE PORTS ASSOCIATION

The Golden Gate Ports Association [GGPA] is pleased again to present testimony to this committee regarding the Corps of Engieers program for its region in California. The GGPA consists of six publicly owned ports in the region; they are Oakland, Redwood City, Richmond, Sacramento, San Francisco, and Stockton. The GGPA is a cooperative organization that is dedicated to promoting trade through this region.

The GGPA would like to congratulate the Congress on the passage of the Water Resources Act of 1986, with its inclusions of projects recommended for improving the channel depths in some of the ports in the region. The GGPA knows that it is important to continue to modernize the channels in order to provide adequate means for receiving ships of the world's fleet to enhance trade with other countries in the world, and, in particular, to promote a need for growing export trade to bring the balance of payments under control.

Projects recommended for funding include Richmond Harbor, Oakland outer and inner harbors, Sacramento River deep water ship channel, and San Francisco Bay to Stockton (John F. Baldwin and Stockton ship channels). GGPA recommends approval of the amounts included in the President's budget as adequate to meet the needs in fiscal year 1988.

In addition, the GGPA recommends additions to the operations and maintenance allocations of $400,000 for dredging a 5-foot recreational channel at Redwood City Harbor and increase to $2 million for drift removal (to repair the debris dock at the San Francisco operations yard).

All these projects represent a significant increment of improvement in the facilities in the GGPA that are important for commerce and navigation. In addition, they are important for the maintenance of readiness of the military installations in the GGPA region. For these reasons, the GGPA urges the approval of funding for the projects listed.

RANCHO PALOS VERDES, CALIF., STUDY

STATEMENT OF MELVIN HUGHES, MAYOR, RANCHO PALOS VERDES, CALIF.

Mr. BAGLEY. Mayor Melvin Hughes of Rancho Palos Verdes, Calif.

Mr. HUGHES. Mr. Chairman and Senator Wilson, the city of Rancho Palos Verdes has within its borders the largest landslide, urban landslide, in the United States.

This has been an inch a day disaster that has been going on for many years, and as such the city has not been eligible for any form of federal or state aid.

Over that time we have lost more than 140 homes and many more are seriously threatened today. The city has recently spent more than $4 million of its own funds with excellent success in abating the upslope portions of that landslide, and now the Corps needs $250,000 for a reconnaissance study involving the shoreline portions of the landslide.

H.R. 6 authorized the Corps study and we respectfully request that this distinguished committee's assistance in obtaining the necessary funding.

Senator COCHRAN. You said how much, an inch a day?

Mr. HUGHES. An inch a day disaster, in fact, more than an inch a day.

Senator COCHRAN. Very interesting.

[The statement follows:]

STATEMENT OF RANCHO PALOS VERDES, CALIF.

The Portuguese Bend landslide in the city of Rancho Palos Verdes is one of the largest urban landslides in the United States and affects some 1,100 acres of coastline properties. One hundred and forty homes have been destroyed with another 218 remaining in the landslide area. Ten million tons of mud and debris have been deposed in the ocean because of shoreline erosion. Shoreline erosion is also one of the major reasons the landslide continues to move.

The city has invested over $4 million and now the Corps needs $250,000 for a reconnaissance study for possible construction at the shoreline. Impact area construction to halt shoreline erosion will cost approximately $20 to $30 million. The project benefit is estimated to be $2.4 million annually or $121.5 million over 50 years.

This project was authorized in H.R. 6 and, now, we respectfully ask the attention of this distinguished committee to this public safety matter involving shoreline stabilization.

Thank you, Mr. Chairman.

SANTA CRUZ SMALL BOAT HARBOR, CALIF.

STATEMENT OF BRIAN FOSS, PORT DIRECTOR, SANTA CRUZ PORT DISTRICT, CALIF.

ACCOMPANIED BY JACK MEEHAN, COMMISSIONER

Mr. BAGLEY. Brian Foss, port director, Santa Cruz Port District.

Mr. FOSS. Yes, I am here with the chairman of the commission, Jack Meehan. Good afternoon.

We are here to support the jetty study that was authorized by H.R. 6. It is detailed in our testimony. More importantly, I am here to tell you about a return on investment that you are already getting and will be getting over the next 27 years.

Two years ago, the federal government joint ventured and cost shared a dredging system for Santa Cruz Harbor. That system is now on line and keeping Santa Cruz a fully open, operational harbor for the first time in its 25-year existence.

This project will save the federal government over $20 million over the life of its project, because the port district is now independent and taking on the financial responsibility of dredging.

Thank you.

Mr. BAGLEY. I think it is significant, Mr. Chairman and Senator Wilson, that one of our ports now has taken on all future maintenance responsibilities by acquiring this dredge system and paying for it from the Corps of Engineers. That is sort of a breakthrough, we think.

[The statement follows:]

STATEMENT OF THE SANTA CRUZ PORT DISTRICT

SUMMARY

Project:	Federal Navigation Channel at Santa Cruz Small Craft Harbor, Santa Cruz, California
Appropriation:	$300,000 Reconnaissance Study for Santa Cruz Harbor Jetty System $230,000 Jetty Condition Survey

In 1985 the Santa Cruz Port District and the United States Corps of Engineers struck a new and innovative partnership to solve the shoaling problem at Santa Cruz Harbor. The 99th Congress funded 75% of a complete dredging system with the Port funding the remainder. The Port District, which will henceforth bear the full operational cost of yearly dredging, is just completing its first operational season.

A great success is reported. The harbor has been open to navigation the entire winter. The dredging system stands as testiment to the benefits of federal/local cooperation. The Congress and the Corps are commended for their foresight and for their expediency in implementing of this project.

The new system has not only created a fully productive harbor but will result in a savings to the federal government of $20 million over the next 27 years. It is truly a success story.

MORE CHALLENGES REMAIN

Although the shoaling problem has been mitigated by the dredging system, major problems remain with the harbor entrance design. Even at design depth, breaking surf can occur causing vessels to broach and even capsize. PL 99662 has authorized a comprehensive study of the entrance system.

The Port District requests that the $300,000 reconnaissance study for Santa Cruz Harbor be funded in fiscal year 1988 so that the Corps of Engineers may commence this project.

The Port District also requests the Corps of Engineers be funded $230,000 for its routine jetty condition survey as per the President's FY 88 budget.

ADDITIONAL PREPARED STATEMENTS

Mr. BAGLEY. Also, we have other witnesses here who have decided to submit statements rather than present oral testimony in the interest of time. These include the Port of Sacramento's chief engineer, John Christian; the Port of Stockton, which is well represented by its port director and commisioners.

We have also Les Westfall from up north, the Humboldt Harbor. We have the director of public works of Orange County beaches and parks, Carl Nelson; Ted Reed, director of Los Angeles County Department of Beaches and Harbors; and Todd Coburn, executive director of San Francisco's clean water program, among others. We also have a list of those in attendance to be introduced.

Mr. Chairman, with your permission, we submit these for inclusion in the record.

Let me just say in conclusion that several of the speakers or witnesses, including Congressman Anderson, have referred to the coastal problems of California. We have literally an orphan in the storm.

That is a program you probably have heard about through the Corps of Engineers, these California coastal studies of storm and wave damage. We are asking for an additional $400,000, in excess of the President's request, because the methodology and the scientific techiques being developed in this study are critically important, we believe, not just to California, but to find new ways of solving coastal problems throughout the nation.

We certainly urge, since there is no other sponsor for this long overdue completion of this program that we are giving our fullest support.

Thank you very much for the opportunity to appear. Hopefully, we will be back next year for the 30th year, Mr. Chairman and Senator Wilson. Thank you.

Senator COCHRAN. Thank you very much, Mayor. I, on behalf of the subcommittee, would like to congratulate you for the manner in which you presented the witnesses. That was real good.

I have been informed by the staff of the procedures that you go through in the state of California before you get back here. That is also impressive, and being a neighbor of yours, I congratulate you on the fine work that was done here today.

[The statements follow:]

STATEMENT OF THE CITY OF LONG BEACH AND THE LONG BEACH BOARD OF HARBOR COMMISSIONERS

Mr. Chairman and Members of this distinguished Committee. I am Evan Anderson Braude and have been authorized to represent the City and Port of Long Beach in reguard to this appropriation request.

The Ports of Los Angeles and Long Beach combine to make the largest commercial port complexes in the United States. These two ports, in cooperation with the Corps of Engineers, are developing a long range master plan, informally known as the "2020 Plan", which will demonstrate the need for additional navigation channels. Dredge material will be retained on sight as landfill. It is requested that the Committee approve the Administration's budgeted amount of $600,000 to continue this vital feasibility study.

As authorized by the Water Resources Development Act of 1976, the Corps of Engineers currently maintains a hydraulic model of San Pedro Bay. This model assures that any future port development will safely and economically berth ships while having a minimal adverse impact on the environment. This model is currently in need of upgrading to include more modern technology, and the Administration's budget includes $1,345,000 for this purpose. It is therefore requested that the Committee appropriate this amount.

The City and Port of Long Beach also require federal funding for remedial maintenance dredging at the mouth of the Los Angeles River. The impact of accumulated flood-deposited silt entering San Pedro Bay area are serious navigational hazards to commercial boating activity in the harbor. To achieve the greatest economy of funds, these silt deposits should be removed on an annual basis as a scheduled item of work, and the dredged material should be used for filling scoured edges of the river channel, and for replacement of sand along the Long Beach shoreline. The amount of siltation is influenced by operational decisions at the Corps of Engineers' Hansen Dam, located at the headwaters of the Los Angeles River. It is currently estimated that an annual appropriation of $1,500,000 would fund this most essential remedial project and Congress is therefore respectfully requested to appropriate this amount.

The Port of Long Beach has filed with the Committee testimony which provide details about these three projects. This testimony also includes resolutions adopted by both the Long Beach City Council and the Board of Harbor Commissioners supporting these requested appropriations.

The Ports of Long Beach and Los Angeles are an important resource for the economy of the entire United States and provide many benefits to local and Federal agencies in the San Pedro Bay area. It is important that these ports continue to develop to meet the needs of the future and be able to maintain safe and economic navigation channels today.

I thank you, Mr. Chairman, for allowing me the time and privilege of making this presentation.

STATEMENT OF THE COUNTY OF LOS ANGELES DEPARTMENT OF BEACHES AND HARBORS

The Board of Supervisors of the County of Los Angeles respectfully requests the serious consideration of the Congress of the United States for several projects urgently required to preserve and restore a vital and precious asset, the 75 mile shoreline of Los Angeles County.

During the winter storms of 1983 a combination of unusually high tides and strong winds caused extensive damage to the Los Angeles County coast. In the past four years the County has worked diligently to restore our beaches to their pre-storm condition.

While the beaches may appear to be significantly restored, they continue to be extremely vulnerable to future storms. Healthy beaches are necessary, natural buffers to protect public facilities from the unpredictable forces of the ocean. Because Los Angeles County has one of the most heavily urbanized and developed shorelines in the country, it is extremely important to fund and complete the studies requested below in order to help prevent future damage to heavy public investments in shoreline facilities.

For several years we have also requested funding for continuation of a federal survey of the North Coast of Los Angeles County to determine feasible sites for construction of small craft berthing facilities and harbors of refuge. A major urban development adjacent to the federal channel in Marina del Rey has been approved in the local coastal zone management plan, thus giving this study a high priority. This, and other study requests are outlined below.

California Storm and Tidal Wave Study (Approximate cost: $2,000,000)

The California Storm and Tidal Wave Study is presently examining the San Diego County coast to document changes in the shoreline and compile a technical data base quantifying these changes. This data base will provide information necessary for decisions regarding the restoration and maintenance of the shoreline.

Funding should be increased to $2,000,000 in fiscal year 1988 to initiate monitoring and analysis work in the South Coast Region, which includes Orange and Los Angeles Counties. This is a heavily populated region with substantial beach use and severe storm damage problems threatening public property. Information from this study will help local government make better land use decisions.

North Coast of Los Angeles County Navigational Survey and Study
(Approximate cost: $225,000)

Every year there is a growing demand for small craft harbor facilities in the United States, and nowhere is the demand more acute than in the Los Angeles metropolitan area.

The Marina del Rey Small Craft Harbor, a joint Federal/County project, has been greatly successful since its inception. Over $4.6 million has been expended by the Federal government since the project was first authorized in 1954. Matching funds from the State and County have topped $19 million, and the private sector has invested over $175 million in a great variety of public facilities. Both government agencies and the private sector alike have realized a substantial financial return from Marina del Rey.

A recently approved Coastal Zone Management Plan has identified a site adjacent to the Marina del Rey Small Craft Harbor for a new boat basin connecting with the existing navigation channel. A navigation study costing $250,000 is urgently needed for this area which is possibly the last significant opportunity to provide small craft facilities on the Los Angeles County coast.

Point Mugu to San Pedro Breakwater (Approximate cost: $300,000)

Unusually strong winter storms in 1982-83 caused extensive damage to the Los Angeles County shoreline. The normal storm track was altered by the effects of the El Nino phenomena and many strong storms directly hit the California coast. These storms coupled with unusually high tides caused widespread damage to beaches and shoreline facilities estimated at over $19 million.

While much of the sand has returned to the County's beaches, they remain vulnerable to future storms without proper shore protection. This feasibility study should be funded in order to help determine the most effective methods of shoreline protection at those points within the Santa Monica Bay and San Pedro compartments which are most vulnerable to future storm attack.

Additionally, the City of Santa Monica has created a Santa Monica Pier Restoration Corporation to formulate plans for the restoration of their famous pier, severely damaged in the 1982-83 storms. An important part of the pier redevelopment involves the re-establishment of a breakwater. Therefore, the City of Santa Monica is interested in having the Corps of Engineers study the feasibility of rebuilding the breakwater, which could protect the new pier. Inclusion of this project may increase cost of the study in future years.

Marina del Rey Channel Dredging (Approximate cost: $1,800,000)

During early 1987, the Corps is dredging the Marina del Rey Entrance Channel to provide for continued safe navigation. However, only beach-quality material is being removed, leaving over 100,000 - 200,000 cubic yards of non-beach quality material still above design depth. A bio-essay and off-shore disposal will be required to remove this material within the next year.

STATEMENT OF THE PORT OF LOS ANGELES

My statement today on behalf of the Port of Los Angeles details the importance of continued federal support for two major port development programs which the U.S. Army Corps of Engineers has undertaken for the improvement of the San Pedro Bay Ports of Los Angeles and Long Beach.

The programs consist of two related studies that are vital to our continued growth. The first is the tidal and resonance model study of the Los Angeles - Long Beach Harbors being conducted at the Army Corps of Engineers Waterways Experiment Station at Vicksburg, Mississippi. The other is the Corps' feasibility study for Phase I of the "2020 Master Plan" which is incorporated in Section 201 of the Water Resources Development Act of 1986 (P.L. 99-662). Both on-going studies are directly related to the federally sponsored reconnaisance study which resulted in the "2020 Master Plan".

The 2020 Master Plan is a response to the accelerated Pacific Rim trade and technological changes that have resulted in a significant increase in cargo shipments through the West Coast, particularly through Southern California. Together, the Ports of Los Angeles and Long Beach rank as the number one port for Customs collections. The Los Angeles Customs District collected $615.4 million during the first quarter of fiscal 1987, representing a significant return to the federal government on its investment in the two Ports.

For FY88, the Administration has proposed that the tidal and resonance model study of the Los Angeles - Long Beach Harbors at Vicksburg, Mississippi be funded at $1.24 million---again a funding level which we agree is necessary and which we enthusiastically support. The Vicksburg Model Study, under the charge and supervision of the Corps of Engineers, is a long-term harbor response, ship motion and tidal circulation study for the Ports of Los Angeles and Long Beach, designed to collect data for the evaluation of the Ports' response to changes that the "2020 Plan" project will have on the local port environment. Changes in tidal circulation and harbor channel flushing must be examined to determin what effects channel deepening and landfill expansion will have on water quality in both the ports and the local vicinity. A significant factor that must be addressed in the study is the effect of the proposed new channel configurations on harbor resonance.

The Vicksburg Model also is being upgraded from funds appropriated for FY87. The model upgrade is necessary to provide the data which will reflect state-of-the-art physical and numerical modeling techniques and will produce the most accurate study data possible. Due to lower operations allocations in the last several fiscal years, only maintenance of the model had been funded. At this time, however, work on both the model study and the model upgrade are proceeding simultaneously.

The Army Corps of Engineers has been charged with the responsibility of providing the basic data on harbor conditions upon our submission of proposals for site-specific projects. Without adequate funding of the model study-upgrade program, the Corps of Engineers' data base on the San Pedro Bay will be incomplete. The gathering of adequate information for the evaluation of long-range port development will be virtually impossible without the model upgrade. Both ports are investing millions annually from local revenues through continuing capital development programs. Congressional approval of at least $1.24 million is extremely vital to continued cost effective planning and development.

The feasibility study will determine the need for new deeper or improved channels to accommodate increased shipping and deeper draft vessels which are directly linked to future land, terminal facility and infrastructure requirements. Both the Ports of Los Angeles and Long Beach are assisting the study efforts by independently providing valuable research data.

The Corps of Engineers' feasibility study was initiated in April, 1986, prior to the passage of P.L. 99-662 and will be completed as expeditiously as possible, consistent with the funds that are available from appropriations. The Port of Los Angeles is very pleased that the President's FY88 budget proposal includes $600,000 funding for the feasibility study. This increased funding of the feasibility study, i.e., Phase I of the "2020 Plan", is relevant and critical to the preparation and approval of the Chief Engineer's report on channel deepening in accordance with the provisions of P.L. 99-662, as well as for future cooperative agreements and Congressional appropriations that will be matched, to the appropriate level, with funds from the Ports.

To enable continuation of our coordinated federal/local efforts, it is essential that there be Congressional approval of the Administration's request for $600,000 for the feasibility study in FY88 so that this important work can continue without delay. Phase I of the "2020 Master Plan" calls for dredging of the San Pedro Bay channels to accommodate deep-draft vessels and the creation of major disposal landfill areas. Phase I is scheduled for completion in 1993. Without this work, we believe there is a likelihood of water-borne cargo "grid-lock".

The Port of Los Angeles also concurs with the recommendation of the Port of Long Beach and the California Marine Affairs and Navigation Conference (C-MANC) for federal funding of remedial maintenance dredging in the mouth of the Los Angeles River at an FY88 appropriation of $1.5 million.

Chairman Bevill, let me conclude by saying how much we value the vision which this Subcommittee has demonstrated in allocating scarce federal resources to projects such as ours. For our part, we view our commitment to the expansion of water-borne transportation as a service to the Nation as well as to our region. By the year 2020, we expect Customs collections to reach over $6.2 billion from the two-port complex based upon the economic activity anticipated from the ports' expansion.

Thank you for the opportunity to address you today. We stand ready to continue working with you in discharging our responsibility to meet the needs of the future.

STATEMENT OF THE CITY AND COUNTY OF SAN FRANCISCO

The City and County of San Francisco has invested $100 million in improvements to the Ocean Beach/Great Highway corridor. The money -- a combination of federal, state and local funds -- was used to build a massive water pollution control project paralleling Ocean Beach on the west side of the City. The Great Highway, one of the main transportation arteries for the west side of San Francisco, was torn apart during construction of the pollution control project and is now being re-built.

Wave erosion caused by rising sea levels and severe winter storms at Ocean Beach now threatens the $100 million investment in pollution control facilities and the rebuilt Great Highway. It also endangers the adjacent recreational beach. In response, the City has placed broken concrete and rubble on the bluffs behind the beach -- but this can only be considered a temporary measure. The U.S. Army Corps of Engineers' expertise is critical to finding a more effective, permanent solution.

Congress previously authorized the Corps to study erosion problems along the Ocean Beach corridor. The Corps originally planned to include the $300,000 necessary to fund the study in its FY '89 budget but now agrees the urgency of the erosion problem suggests its inclusion in the FY '88 Corps budget.

The City and County of San Francisco will act as local sponsor of the study. The Mayor and the Board of Supervisors have approved the creation of a special fund whose capital and accumulating interest will pay for the local share of costs.

Congresswoman Boxer is also in support of this project, and we are grateful to her for her testimony on the project's behalf.

We urge inclusion of the $300,000 necessary to fund the reconnaissance study in the Corps' 1988 budget. The City and County of San Francisco stands ready to work with the U.S. Army Corps of Engineers to solve this critical problem.

STATEMENT OF ALEXANDER KRYGSMAN, PORT DIRECTOR, PORT OF STOCKTON, CALIF.

Mr. Chairman, I am Alexander Krygsman, port director of the Port of Stockton, Stockton, Calif.

The Port of Stockton deep-water channel deepening project is an authorized project presently under construction.

The Port of Stockton is primarily a bulk port that serves industry and agriculture in the San Joaquin Valley in California and the bulk imports and exports of the Western States, including the coal areas of these States.

The Port of Stockton recognized as far back as 1952 that deeper channels would be needed for the movements of bulk cargoes and requested the Corps of Engineers to deepen the channel in 1952. Coal, grain, fertilizers, and many other bulk materials require deeper channels to serve the larger bulk carriers.

The nation needs ports that can handle larger, more economical, and more fuel-efficient vessels close to the production areas, both agricultural and industrial, to conserve energy.

The Port of Stockton is such a port. Its channel has now been deepened and only associated work such as levee protection and completion of wildlife areas still needs to be completed, and this work deserves continued funding to completion. We urge you to appropriate the same amount as contained in the proposed President's budget.

I want to thank the committee for its past support that made it possible to do the dredging which was completed just last February. Vessels are now utilizing the extra depth and there has been great interest by shippers to increase drafts and tonnages on the vessels as was anticipated.

I wish to also state again for the record that the Port of Stockton is in support of deepening the Sacramento Channel.

STATEMENT OF DENNIS CLARK, PORT DIRECTOR, PORT OF SACRAMENTO, CALIF.

Mr. Chairman and members of the committee, thank you for this opportunity to present testimony on behalf of the Sacramento River deep-water ship channel deepening project.

After 17 years of study, our project was authorized and funded last year through the passage of the Water Resources Development Act of 1986. We have entered into a local cooperation agreement with the Army, providing for cost sharing.

Construction is scheduled to commence on the first phase in July and on the second phase in January. We respectfully urge that you support the amount of $11 million in the President's budget for fiscal year 1988, which will permit the construction to continue as planned throughout the coming fiscal year.

CALIFORNIA WATER RESOURCE DEVELOPMENT PROJECTS

Senator COCHRAN. Our next panel of witnesses is the California Water Commission; Clair Hill is chairman.

Please come forward Mr. Hill with whoever you have brought with you.

Senator WILSON. Mr. Chairman?

Senator COCHRAN. I am happy to recognize your Senator from California, Pete Wilson, who may want to have the opportunity for comments, to introduce you, or for whatever purpose. He would like to be recognized.

Senator Wilson?

Senator WILSON. Thank you, Mr. Chairman. You were correct in divining my purpose. I will only say for your benefit, although I suspect that you don't need the introduction either that the commission does very important work, as I indicated in my formal statement.

But also, I am particularly pleased to welcome Clair Hill, whose name has been synonymous with serious responsible development of water resources for a very long time.

It is, I think, no exaggeration, in fact, an understatement to say that he has been a pioneer in the field, and is a truly distinguished leader in the development of water resources.

I am very proud that he is a constituent and, I might say, a supporter. I am particularly proud of that. The work that he and the other members of the commission do is of extraordinary importance.

I am pleased that Mr. Cochran made the statement he did just before vacating the chair, and that is that process that the commission and C-MANC members go through in California before they come back here is one that would serve as an admirable model for the Senate.

They do their homework. They reduce statements to models of brevity and relevence, and I must say that that doesn't just happen. They put in long, long hours and days and they are dedicated public servants, and I am grateful to them.

I am very proud of this panel and the one that preceded it. They also are a model of brevity in terms of presentation, something strange to our traditions here.

Senator COCHRAN. Thank you very much, Senator.

Mr. Hill, as chairman of the commission, we recognize you and ask you to proceed to present whatever testimony you have prepared for us today.

STATEMENT OF CLAIR A. HILL, CHAIRMAN, CALIFORNIA WATER COMMISSION

ACCOMPANIED BY:
STAN BARNES
ORVILLE ABBOTT, EXECUTIVE OFFICER

Mr. HILL. Thank you very much, and thank you, Senator, for those kind words. I will have say that we do work hard on this and we have a very dedicated group.

I have with me today other members of the California Water Commission, Mr. Stan Barnes, and, of course, Orville Abbott, our executive officer.

The commission is charged by statute to represent the state in the interest of the water resources. We have coordinated our presentation with some 30 other witnesses, who will speak, part of them, for the record. For some, we will just be filing their statements for the record in the interest of time.

We generally, the commission that is, supports the budget of the Corps of Engineers. We find the Corps' appropriation request reasonable and realistic. We, however, support some additional funds for eight specific projects.

The recommended funds are relatively small. Due to a breakdown in logistics, one project, the Whitewater River flood warning system was left out. That information will be submitted.

In our prepared statement, which has been filed, we point out the commission's recommendation for funds to be appropriated for several Bureau of Reclamation programs.

In the fiscal year 1987–88 budget, the Secretary of the Interior has eliminated, or significantly reduced, funds to maintain the Central Valley Project. We feel these existing facilities should be properly maintained before funds are used for the construction of new projects.

We are supporting funding of two new loan applications under the Small Reclamation Act. This act was authorized by the Congress in 1986, and supported by the Department of the Interior. These reclamation projects or applications are for San Bernardino County and the United Water Conservation District.

The Secretary of the Interior has unilaterally withdrawn funds from Sacramento and San Joaquin delta program, which are jointly funded by the Bureau of Reclamation and the California Department of Water Resources.

The Department of Fish and Game, State Water Resource Control Board, U.S. Fish and Wildlife, and U.S. Geological Survey, were supporting funding to continue participation of the Bureau of Reclamation's program.

The commission is also recommending appropriation of several ongoing investigations by a wide variety of State agencies.

[The statement follows:]

STATEMENT OF THE CALIFORNIA WATER COMMISSION

Mr. Chairman and members of the Committee, I am Clair A. Hill, Chairman of the California Water Commission, an official agency of the State of California. The Commission is composed of nine representative citizens from throughout the State. The Commission is charged by statute with representing state and local interests before this Committee. We have coordinated our presentation with representatives of local agencies. On behalf of the California Water Commission, I would like to express our sincere appreciation for the support this Committee has given California water resources and flood control appropriations over the years. I am privileged to appear before you with the official recommendations of the State of California for fiscal year 1987-88 appropriations.

FEDERAL-STATE COORDINATED OPERATION AND SUISUN MARSH PRESERVATION AGREEMENTS

I would like to speak first, as we did last year, on a matter of significant importance to both federal and state interests -- the coordinated operation of the Federal Central Valley Project (CVP) and the California State Water Project (SWP). Both the SWP and CVP projects divert surplus water from the Delta channels and can optimize their respective shares of this water by coordinating their operations from a common pool, especially since the SWP has greater diversion capacity and the CVP has greater storage capacity. The Coordinated Operation Agreement was approved by the Congress and the President, and was recently executed by the U. S. Bureau of Reclamation (Bureau) and the California Department of Water Resources (Department). The Congressional legislation approving the Coordinated Operation Agreement also authorized the Bureau to execute the Suisun Marsh Preservation Agreement. That agreement was recently executed by the Bureau and the Department. The execution of these two agreements brings to a successful conclusion a long and difficult period of negotiations between the State and Federal Governments.

CORPS OF ENGINEERS

We support the funding provided for the following projects of the Corps of Engineers (Corps):

General Investigations

a. The Calleguas Creek investigation in Ventura County which will be completed with the FY 87-88 appropriations.

b. The study of serious flooding problems along the San Rafael Canal in Marin County caused by a combination of runoff and high tides in San Francisco Bay.

c. The Los Angeles County Drainage Area Review, one of the Corps' most urgent studies. The Corps is examining the adequacy of completed flood control channels and dams protecting densely developed portions of Los Angeles County.

d. The Corps' continuing examination of flooding problems along the San Francisco Bay Shoreline in Alameda, Santa Clara, Sonoma, Napa, and Solano Counties.

e. Investigation of the Northern California Streams, Dry Creek watershed, located in portions of Sacramento and Placer counties where urbanization of the Sacramento metropolitan area is occurring.

f. On the Kaweah and Tule Rivers in the San Joaquin River watershed, the Corps' evaluation of the feasibility of providing additional storage for flood protection and possible increased conservation storage.

g. Interim No. III of the Santa Ana River Basin and Orange County Study, which addresses some very serious flooding problems in the rapidly urbanizing Orange County area.

h. The Final Report of the Santa Ana River Basin and Orange County Study, which addresses some of the very serious flooding problems in the San Bernardino County area.

i. The study of the proposed Blue Ridge Dam on a tributary of Cache Creek in Yolo County, which could help resolve the problems of flooding, bank erosion, and sedimentation on Cache Creek as well as develop a reservoir for a firm water supply.

j. A reconnaissance investigation of Imperial County and San Diego County streams which drain into the Imperial Valley.

k. Northern California Streams-American River Watershed, for which the Corps would conduct a one-year reconnaissance study of alternative means of flood control predicated on the assumption that Auburn Dam, as previously authorized, would not be constructed.

l. The Sacramento-San Joaquin Delta Investigation, which would allow the Corps to participate with the Department, the Department of Fish and Game, the Bureau, and local agencies in very important ongoing programs to resolve flood control, fisheries, and water conveyance issues.

General Investigations, Preconstruction Engineering and Design

Funding in FY 87-88 will provide for the initiation of preconstruction engineering and design activities for the following projects:

a. The tentative selected plan for Caliente Creek consisting of a flood detention dam and levee and channel works to provide flood protection.

b. The recommended plan for improvement of the Guadalupe River including the widening and deepening by excavation of one or both sides of the Guadalupe River and the construction of an underground channel bypass conduit.

c. The plan of improvement of the Santa Ana River Main Stem Project providing for construction of the Seven Oaks Dam, flood plain management of the flood overflow area in the Santa Ana River between the Seven Oaks Dam and the existing Prado Reservoir, the enlargement of Prado Dam to increase the reservoir storage capacity, and other facilities located downstream.

Construction

Construction funding in FY 87-88 provides for continuing construction of flood control projects:

a. The Pajaro River project, which will protect portions of the City of Gilroy from damaging flood flows along Uvas Creek. Santa Clara Valley Water District will participate in financing the project.

b. The Redbank and Fancher Creeks project in the Fresno-Clovis area, which consists of modifications to the existing Big Dry Creek Dam, construction of the Fancher Creek Dam, and three detention basins. The Fresno Metropolitan Flood Control District will participate in financing the project.

c. The Fairfield Vicinity Streams project, which involves channel improvements. The cost-sharing agreement has been executed by the City of Fairfield.

d. The local sponsor for the Merced County Streams Project is Merced County. The cost-sharing agreement provides for staging of facilities.

e. The Wildcat and San Pablo Creeks project, for which Contra Costa County, the local sponsor, will share in the construction costs.

f. Continued construction of the Corte Madera Creek project in Marin County.

g. Continued construction of onshore recreation facilities for Dry Creek (Warm Springs) Reservoir located in the Russian River Watershed in Sonoma County.

h. Selective channel clearing on the Lower San Joaquin River to improve its flood carying capacity.

i. Continued construction of channel improvements on the Sweetwater River in San Diego County.

j. Continued construction on channel improvements for Walnut Creek, extending from the City of Walnut Creek to Suisun Bay.

k. Continued construction of onshore recreation facilities at New Melones Reservoir.

l. Channel improvements on the San Luis Rey River Flood Control Project. Funds to initiate construction were appropriated in FY 86-87.

BUREAU OF RECLAMATION

We are supporting FY 87-88 funding for planning and construction programs of the Bureau as follows:

a. Contracts to complete construction of facilities of the CVP-San Felipe Division to convey water to Santa Clara and San Benito Counties.

b. Continuing efforts to improve the passage of fish at the Red Bluff Diversion Dam.

c. Joint federal-state study of potential solutions to irrigation drainage problems in the San Joaquin Valley west side and the CVP-San Luis Unit will continue.

d. The joint federal-state feasibility study of the flood threat to the San Luis Canal from the Arroyo Pasajero Cross Drainage will be completed.

e. Planning and operation at Auburn Dam will continue pending a decision on a future course of action on the construction of the dam.

f. Award of the construction contracts for the Buckhorn Mountain Debris Dam and the fish hatchery portions of the joint federal-state Trinity River Restoration program.

Small Reclamation Projects Act Loans

The Small Reclamation Projects Act loan program is important to California and we believe to the entire western United States. We support funding of the loan applications in the President's budget, as described below:

a. Elsinore Valley Municipal Water District is constructing levees and channels to stabilize Lake Elsinore in Riverside County.

b. Oakdale Irrigation District is converting unlined irrigation canals to concrete pipeline and installing water measuring devices.

c. Rancho California Water District in Riverside County is constructing water wells, recharge basins, and pipelines.

d. Santa Ana Watershed Project Authority is constructing pipelines, storage reservoirs, and pumping stations for municipal, industrial, and agricultural water uses.

e. Ramona Municipal Water District will construct a dam and reservoir to impound imported water during the winter to use when demand is high. The San Diego County Water Authority supplies the water to the District.

f. Rainbow Municipal Water District will construct the Beck Reservoir and associated pipelines to impound water imported from the Colorado River.

RECOMMENDATIONS FOR ADDITIONAL FUNDS

The Commission is recommending that funds be appropriated for several Corps and Bureau projects. These projects merit special consideration.

CORPS OF ENGINEERS

	President's Budget	Commission's Recommendation
Inspection of Completed Works-Sacramento River Flood Control Project	-	$ 700,000
San Joaquin River Basin-Calaveras River	-	$ 450,000
Santa Barbara County Streams-Mission Creek	-	$ 300,000
Cache Creek	$ 280,000	$ 530,000
Coyote and Berryessa Creeks	-	$ 150,000
Napa River	-	$ 250,000
Walnut Creek Basin Investigation	-	$ 150,000
Sacramento River, Chico Landing to Red Bluff	-	$ 250,000

BUREAU OF RECLAMATION

The Secretary of the Interior has programmed additional funds in FY 87-88 for construction of two new projects on the Colorado River in Arizona and Utah. The Commission has supported the concept of providing adequate funding so that the construction of projects could move along at a timely and prudent rate. However, in the FY 87-88 budget, the Secretary of the Interior has eliminated or significantly reduced funds to maintain existing projects. Existing facilities should be properly maintained before new projects are funded.

The Secretary of the Interior has unilaterally withdrawn funds from programs which are jointly funded by the Bureau, Departments of Water Resources and Fish and Game, State Water Resources Control Board (Board), U. S. Fish and Wildlife Service, and U. S. Geological Survey. These programs are required under the terms of water rights decisions of the Board relating to the rights of the Bureau to divert water from the Delta for the CVP.

The Commission is supporting funding for two new applications under the Small Reclamation Projects Act. This Act was reauthorized in 1986 after several years of debate by the Congress. The reauthorization of the program was supported by the Department of the Interior.

The Commission is also recommending appropriation of funds for several ongoing investigations supported by a wide variety of local and state agencies. These investigations involve relatively small sums of money, and continuity will be lost by a year's deferment.

Finally, the Commission, for the first time, is recommending appropriation of funds for the Operation and Maintenance of the CVP. It is necessary that funding be adequate to keep the project operating in an efficient and reliable manner. A portion of these funds will be used to reimburse the Department of Water Resources for costs incurred in operating the CVP-San Luis Unit.

The following are the Bureau programs for which the Commission is supporting additional appropriations:

	President's Budget	Commission's Recommendation
Suisun Marsh Protection-Construction	-	$15,560,000
Decision 1485 Monitoring	-	$ 650,000
San Bernardino County (Day Creek) Loan	-	$ 1,000,000
United Water Conservation District Loan	-	$14,550,000
Trinity River Restoration Program	$ 5,105,000	$ 6,105,000
CVP-Kellogg Unit Investigation	-	$ 75,000
Delta Support Studies ($409 in Miscellaneous Project Programs-C&R; $408 in CVP-O&M)	$ 817,000	$ 1,389,000
Off Stream Storage Investigation	-	$ 363,000
San Joaquin Valley Conveyance Investigation	-	$ 450,000
Delta Water Management	-	$ 565,000
Minor Work in Connection with Completed Projects, Mid-Pacific Region	-	$ 55,000
Environmental and Interagency Coordination Activities, Mid-Pacific Region	-	$ 625,000
Refuge Water Supply	-	$ 25,000
Spring Creek Toxicity Control Study	-	$ 350,000
Technical Assistance to States, Mid-Pacific Region	-	$ 75,000
Central Valley Project O&M - Trinity River Channel Maintenance and Fish Monitoring	-	$ 1,365,000
Central Valley Project O&M - Suisun Marsh Protection Facilities	-	$ 1,640,000
Central Valley Project Operations and Maintenance	$34,872,000	$44,603,000

The Commission also supports the recommendations of the Colorado River Board for appropriations of funds for other Bureau programs.

U. S. FISH AND WILDLIFE SERVICE

The Commission does not usually recommend appropriations for projects of the Fish and Wildlife Service. The Coleman Fish Hatchery is an exception to this policy. It provides mitigation measures to preserve major runs of fisheries which lost natural spawning areas because of the construction of Shasta Dam on the Sacramento River. The facilities are approximately 40 years old and are badly in need of rehabilitation and reconstruction. The Commission is supporting $9,940,000.

Thank you for this opportunity to submit California's recommendations.

CALIFORNIA WATER COMMISSION
FEDERAL FLOOD CONTROL AND WATER PROGRAMS IN CALIFORNIA
FOR FISCAL YEAR 1987-88

(In Thousands of Dollars)

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMMENDATIONS
CORPS OF ENGINEERS						
	GENERAL INVESTIGATIONS - SURVEYS					
3	Calleguas Creek Ventura	2,290	1,790	300	200	200
3B	Northern California Streams- Dry Creek Placer, Sacramento	744	519	150	75	75
5	Imperial and San Diego Counties Streams Flowing into Salton Sea	1,261	11	-	500	500
6	Los Angeles County Drainage Area	5,950	3,898	850	650	650
6A	Marin County Shoreline- San Rafael Canal	650	-	260	100	100
7A	Sacramento-San Joaquin Delta Investigation	2,900	2,183	250	210	210
9	Northern California Streams- Sacramento Metropolitan Area Interim	1,125	-	-	450	450
9A	Inspection of Completed Works- Sacramento River Flood Control Project (Operations and Maintenance)	3,150	-	600	0	700

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMMENDATIONS
9B	American River Watershed Placer, El Dorado, Sacramento	1,250	-	500	200	200
9C	Blue Ridge Colusa, Lake, Yolo	500	-	200	100	100
10	San Francisco Bay Shoreline					
10-1	Santa Clara and Southern Alameda Interim	2,045	1,680	245	120	120
10-2	North Bay Interim Napa, Solano	1,005	147	280	376	376
10-3	San Mateo-Northern Alameda Interim	1,360	696	440	224	224
11	San Joaquin River Basin					
11-2	Tule River	650	239	100	260	260
11-3	Kaweah River	715	273	100	260	260
11-6	Calaveras River	-	-	-	0	450
14	Santa Ana River and Orange County Riverside, Orange, San Bernardino					
14-2	Interim No. III Orange County Tributaries Coyote Creek, Talbert, East Garden Grove, Wintersburg, Huntington Beach, and Greenville-Banning Channels	2,178	962	550	350	350

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMENDATIONS
14-3	Final Report	1,770	1,135	50	300	300
	GENERAL INVESTIGATIONS - PRECONSTRUCTION ENGINEERING AND DESIGN					
3A	Caliente Creek Kern	3,000	-	-	100	100
15	Santa Barbara County Streams- Mission Creek	600	-	-	0	300
16	Walnut Creek Basin	-	-	-	0	150
18	Cache Creek Lake, Yolo	3,000	1,444	500	280	530
18A	Guadalupe River Santa Clara, Alameda	2,000	25	750	625	625
18B	Coyote and Berryessa Creeks Santa Clara	800	-	-	0	150
21	Santa Ana River Main Stem Several	26,100	12,723	6,000	5,100	5,100
39A	Napa River Flood Control Project Napa	-	-	-	0	250
	CONSTRUCTION - GENERAL					
25	Corte Madera Creek Marin	Fed 12,700 Non-Fed 8,700 Total 21,400	8,969	1,300	1,700	1,700
27	Dry Creek (Warm Springs) Lake Sonoma	346,000	293,450	10,570	8,200	8,200
27A	Fairfield Vicinity Streams Solano	Fed 10,500 Non-Fed 10,500 Total 21,000	2,067	2,845	3,900	3,900

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMMENDATIONS
27D	Lower San Joaquin River and Tributaries	5,000	3,098	900	1,002	1,002
28	Merced County Streams	Fed 62,000 Non-Fed 30,200 Total 92,200	4,750	2,883	2,400	2,400
29	New Melones Lake Calaveras, Tuolumne, Stanislaus	385,000	347,157	6,330	4,100	4,100
29A	Pajaro River-Uvas Carnadero Santa Clara	Fed 2,945 Non-Fed 2,945 Total 5,890	580	500	1,865	1,865
29B	Redbank and Fancher Creeks Fresno	Fed 49,200 Non-Fed 16,400 Total 65,600	850	961	1,900	1,900
30	Sacramento River-Major and Minor Tributaries Several	11,900	11,572	230	98	98
31	Sacramento River Bank Protection	Fed 92,300 Non-Fed 42,300 Total 132,600	54,807	6,727	9,500	9,500
32	Sacramento River, Chico Landing to Red Bluff	30,000	10,755	577	0	250
32A	Sacramento River Flood Control Project	Fed 74,600 Non-Fed 96,600 Total 171,200	69,427	288	2,800	2,800

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMMENDATIONS
34	San Luis Rey River San Diego	Fed 33,900 Non-Fed 11,500 Total 45,400	2,024	961	8,500	8,500
35	Santa Paula Creek Ventura (No funds required in FY 88)	36,200	2,024	-	0	0
36	Sweetwater River San Diego	25,200	13,368	6,919	4,913	4,913
37	Walnut Creek Contra Costa	63,700	43,447	7,770	5,100	5,100
38	Wildcat and San Pablo Creeks Contra Costa	Fed 19,200 Non-Fed 14,000 Total 33,200	2,456	3,000	5,360	5,360
	Total - Corps of Engineers				$71,818	$74,168
BUREAU OF RECLAMATION PROGRAMS						
42	Sacramento River Division	352,206	301,513	1,060	4,644	4,644
47	Auburn-Folsom South Unit	2,093,948	339,635	1,000	1,000	1,000
50	San Luis Unit	1,261,092	496,066	12,172	17,941	17,941
	MISCELLANEOUS PROJECT FACILITIES					
60	Trinity River Restoration Program	62,390	1,450	4,650	5,105	5,105

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMENDATIONS
61A	Delta Support Studies (Budgeted $409-Construction; $408-Operations and Maintenance)	Continuing	10,748	1,063	817	1,400
61B	Suisun Marsh Preservation Agreement	-	-	-	0	15,560
61C	Decision 1485 Monitoring	-	-	-	0	650
62	San Felipe Division Santa Clara, San Benito	342,410	282,758	10,642	7,000	7,000
	OTHER PROJECTS					
71	Santa Margarita (Lower Colorado Region) (Project not yet authorized)	220,866	-	-	0	0
73A	San Bernardino County (Day Creek)	13,500	-	-	0	1,000
73B	Eastern MWD Riverside (No funds needed in FY 88)	25,720	21,320	1,070	0	0
74A	Elsinore Valley MWD Riverside	25,975	500	1,000	4,400	4,400
75	Oakdale Irrigation District Stanislaus, San Joaquin	17,774	13,635	4,100	253	253
76A	United Water Conservation District Ventura	18,730	-	-	0	14,550
77	Ramona MWD San Diego	25,708	12,141	1,700	6,789	6,789

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMENDATIONS
77A	Rancho California Water District Riverside	20,940	100	100	8,640	8,640
77B	Rainbow MWD San Diego	18,591	15,942	3,600	1,435	1,435
78A	Santa Ana Watershed Project Authority	14,917	4,000	8,714	2,172	2,172
	FEASIBILITY INVESTIGATIONS					
	SPECIAL INVESTIGATIONS (Mid-Pacific Region)					
79	Kellogg Unit-Central Valley Project Contra Costa	350	-	-	0	75
79A	Off Stream Storage	900	150	350	0	363
80	San Joaquin Valley Conveyance Study	1,196	1,196	250	0	450
80A	Delta Water Management Program	-	-	400	0	565
82	Minor work in connection with completed projects	Continuing	150	105	0	55
84	Environmental and Interagency Coordination Activities	Continuing	10,556	800	0	625
85A	Refuge Water Supply	250	80	170	0	25
86	Technical Assistance to States	Continuing	333	175	0	75
87	Spring Creek Toxicity Control Study Shasta	-	-	350	0	350

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMMENDATIONS
87A	Coleman Fish Hatchery (U.S. Fish and Wildlife Service Project) Shasta, Tehama	12,887	2,253	2,200	0	9,940
	COLORADO RIVER SALINITY CONTROL PROJECT (Lower and Upper Colorado Regions)					
88	Paradox Valley Unit	84,072	22,191	12,282	11,383	14,200
89	Grand Valley Unit	243,043	49,522	12,055	8,525	13,000
90	Las Vegas Wash Unit	129,799	7,965	75	0	600
90A	Lower Gunnison Basin Unit	1,563	1,463	100	0	250
91	Colorado River Water Quality Improvement Feasibility Investigations Multi-State ($100 in California)	58,118	45,060	3,620	875	875
91A	Colorado River Basin Salinity Control Project - Title I ($302 in California)	464,763	290,970	300	25,984	25,984
	OTHER PROGRAMS (Lower Colorado Region)					
94	All American Canal Relocation Advanced Planning Imperial	930	300	630	0	Support
97	San Bernardino Ground Water Investigation	500	-	150	0	150
98	Colorado River Front Work and Levee System ($3,764 in California)	158,812	41,672	5,279	6,242	6,242

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ALLOCATIONS THRU 9/30/86	ALLOCATED FOR 1986-87	PRESIDENT'S BUDGET 1987-88	COMMISSION'S FINAL RECOMMENDATIONS
	OPERATIONS AND MAINTENANCE					
82A	Operations and Maintenance Programs (Central Valley Project ($5,317 is for San Luis Division)	Continuing	-	-	34,872	44,872
	Total - Bureau of Reclamation				$146,077	$208,653
Total - Corps of Engineers and Bureau of Reclamation					$217,895	$282,821

STATEMENT OF RAY BARSCH, GENERAL MANAGER, CALIFORNIA STATE RECLAMATION BOARD

ACCOMPANIED BY WALLY McCORMACK, PRESIDENT, CALIFORNIA STATE RECLAMATION BOARD

Mr. HILL. It is now my pleasure to introduce Mr. Ray Barsch of the State Reclamation Board, which represents 19 projects in our state.

Ray?

Senator COCHRAN. Mr. Barsch, we are glad to have you with us today, and we invite you to proceed.

Mr. BARSCH. I thank you very much, Mr. Chairman and Senator Wilson.

I am, for the record, Ray Barsch. general manager of the State Reclamation Board. I appreciate the opportunity to appear before you today with the recommendations that were adopted by the board at their March 20, 1987, meeting. With me today is Wally McCormack the president of our board.

The board's final recommendations are in this statement which has been already submitted, and the board strongly urges appropriation in the amount listed on our summary sheet on those 19 projects which are directly related to flood control in the Central Valley.

Our local representatives will cover the specific projects, however, I would like to emphasize three projects that need additional funding. They are the Sacramento River flood control project inspection of completed work. That needs approximately $700,000 to keep that vitally needed project moving.

The Cache Creek settling basin. This basin is no longer functioning and, in order to get it on line, we need $250,000 to get the design specs done on that project. The Chico Landing to Red Bluff project, we would require $250,000 to rescope and work on a real problem there at the intake to the Glenn-Colusa Canal.

That summarizes my statement at this time. Thank you very much.

[The statement follows:]

STATEMENT OF RAY BARSCH, GENERAL MANAGER, THE RECLAMATION BOARD OF CALIFORNIA

THE RECLAMATION BOARD'S RECOMMENDATIONS FOR FEDERAL FLOOD CONTROL PROJECTS

Summary
(in thousands of dollars)

Corps of Engineers' Projects	Page	Board's Final Recommendations 1987-88
I. Surveys	1	
Northern California Streams	1	
-- Dry Creek	1	75
-- Blue Ridge	1	100
-- American River Watershed	1	200
-- Sacramento River Metropolitan Area	2	450
Sacramento-San Joaquin Delta Investigation	2	210
San Joaquin River Basin	2	
-- Tule River		260
-- Kaweah River		260
II. General Investigations (PE&D)	3	
Cache Creek Basin	3	530*
Caliente Creek	3	100
III. Construction	4	
Redbank and Fancher Creeks	4	1,900
Fairfield Vicinity Streams	4	3,900
Lower San Joaquin River and Tributaries	5	1,002
Merced County Streams	5	2,400
Sacramento River and Major and Minor Tributaries	5	98
Sacramento River Bank Protection Project	6	9,500
Sacramento River - Chico Landing to Red Bluff Project	6	250*
Sacramento River Flood Control Project	6	2,800
IV. Operations and Maintenance	7	
Inspection of Completed Works - Sacramento River Flood Control Project	7	700*
U. S. Bureau of Reclamation Projects	7	
Auburn Dam	7	1,000

* The Reclamation Board supports reprogramming these amounts if funds can be made available within the President's Budget.

The Reclamation Board, as the State agency which furnishes required local assurances for federal levee and channel projects in California's Central Valley, respectfully submits this statement of support for the following projects.

While all projects are important to the health, safety, and well-being of Central Valley residents, the surveys and projects described as follows are of particular importance to The Reclamation Board.

I. Surveys

A. Northern California Streams:

This survey, authorized in 1958 and 1962, is a study of the Sacramento River and its tributaries, in regard to flood control measures.

Dry Creek

A feasibility report on Dry Creek will be completed by October 1988. Funds for this study are being shared on a 50-50 basis with Sacramento and Placer Counties. Serious flooding occurred in Roseville and Rio Linda in February 1986 emphasizing the need for flood control measures in this area. The Board supports the $75,000 in the President's Budget to complete this study.

Blue Ridge

Cache Creek has water supply, flooding, bank erosion, and sedimentation problems. Blue Ridge Dam project is one alternative that the Yolo County Flood Control and Water Conservation District has investigated. The District is asking the Corps of Engineers to look at the feasibility of the project.

The Reclamation Board supports the $100,000 in the President's Budget for this investigation.

American River Watershed

The Corps has completed a one-year reconnaissance study of alternate means of flood control in the American River watershed. This study was to provide information for the Bureau of Reclamation and the State Department of Water Resources on the flood control for the Lower American River.

The Reclamation Board supports the $200,000 in the President's Budget for the feasibility phase of the study.

Sacramento River Metropolitan Area

An investigation would be initiated in fiscal year 1988. The Reclamation Board strongly supports the $450,000 in the President's Budget for this study. The work accomplished under Inspection of Completed Works (see Section IV) helped identify areas within the Sacramento River Flood Control Project that need further work. This study will determine the need to increase the level of protection appropriate to the Sacramento area.

B. Sacramento-San Joaquin Delta Investigation:

Study area is located in Sacramento, Yolo, San Joaquin, Contra Costa, and Solano Counties and extends from the southern limits of the City of Sacramento, the City of Stockton and west to Suisun Bay. Area consists of about 700,000 acres of land segregated into some 100 tracts and islands, bounded by interconnecting waterways, which are confined by 1,100 miles of levees which normally prevent the lands from being inundated by high tides or high stages. Lands within these levees are among the most productive agricultural lands in the State. The survey considers flood control, associated recreation and environmental problems, Delta water transfer and salinity intrusion problems. A critical need for levee rehabilitation throughout the Delta exists.

Current activities include coordination with the U. S. Bureau of Reclamation and State Department of Water Resources to formulate the comprehensive plan. The Reclamation Board supports the $210,000 in the President's Budget for this investigation.

C. San Joaquin River Basin:

This survey, authorized in 1964 and initiated in 1968, encompasses the southern portion of the Central Valley, including part of the Delta-Central Sierra area and all of the San Joaquin and Tulare Lake Basins. The study will investigate the problems of flood control, irrigation, municipal water supply, power, recreation, fish and wildlife, and water quality. The study area is the site of many complex water supply and water transportation problems. Flooding is a major problem in the study area. During the severe floods of 1969, 1983, and 1986, the area experienced extensive damages. Projects to be considered include: dams and reservoirs, stream diversion, bank protection, and levee and channel improvement.

The Reclamation Board supports the $260,000 in the President's Budget for each of the two interim studies -- Tule and Kaweah Rivers.

II. General Investigations (PE&D)

A. Cache Creek Basin:

The Corps of Engineers has completed its feasibility report regarding water resources development in the Cache Creek Basin. The report recommends enlarging the outlet channel of Clear Lake in the upper basin to reduce flooding of development around the Lake, and in the lower basin enlarging and raising of levees around the existing settling basin to increase the Basin's sediment storage capacity.

This report states that a major flood problem exists along the rim of Clear Lake. Historical inflows to the Lake temporarily raise the lake level causing significant damage to lakefront development. Serious flood damages occurred in 1958, 1970, 1983, and 1986 causing estimated damages of $900,000, $500,000, $1,500,000, and $3,500,000, respectively. This problem can be economically solved by increasing the discharge capability of the Lake's outlet channel.

Also, the storage capacity of the Cache Creek Settling Basin, which was constructed in 1937 to control sediment inflow to the Yolo Bypass of the Sacramento River Flood Control Project, is now exhausted and sediment deposition from Cache Creek is again affecting the flood-carrying capacity of the Bypass and the maintenance of downstream navigation and flood control works. The Draft General Design Memorandum has been completed and funding is needed to prepare design and specifications.

The Board supports the $280,000 in the President's Budget for work on the upper basin and supports an additional $250,000 for the Corps to prepare plans and specifications on the Cache Creek Settling Basin.

B. Caliente Creek

The Corps of Engineers and the Kern County Water Agency (KCWA) are conducting feasibility studies for consideration of flood protection measures on Caliente Creek. These studies are being cost-shared on a 50-50 basis between the Corps and the KCWA. Past floods have caused serious damage and disruption to the communities of Arvin and Lamont and surrounding agricultural areas. The flood of March 1983 caused damages estimated at $25 million. The tentative selected plan includes a 16,000 acre-foot flood detention reservoir and downstream channel improvements to carry 500 cfs releases from the reservoir. The KCWA and other local representatives have been exceptionally supportive of developing flood control for this area.

The Reclamation Board supports the $100,000 in the President's Budget which is for preconstruction engineering and design.

III. Construction

A. Redbank and Fancher Creeks:

The Corps of Engineers has completed its feasibility report regarding water resources development on Redbank and Fancher Creeks, Fresno County. Also, the Draft of the General Design Memorandum has been completed. The report recommends single-purpose flood control improvements on Redbank, Fancher, and Pup Creeks and Alluvial Drain; and dual-purpose flood control and recreation facilities on Big Dry Creek. The plan provides for enlargement of the existing Big Dry Creek Dam and Reservoir, a new dam on Fancher Creek, and detention basins on Redbank and Pup Creeks and Alluvial Drain.

The report states that significant flood problems exist in the expanding Fresno-Clovis metropolitan area. Flooding occurs throughout the entire study area when channel capacities are exceeded.

The Reclamation Board supports the President's Budget which includes $1,900,000 for continuing construction of this project.

B. Fairfield Vicinity Streams:

The project is located in the vicinity of the cities of Fairfield and Suisun in Solano County; the drainage basin comprises 45.8 square miles. There are five streams on which improvements are proposed. These are Ledgewood, Laurel, Union Avenue, Pennsylvania, and McCoy Creeks. The project as presented in the Corps of Engineers' Phase II GDM included channel improvements and diversion of three creeks, levees on two of the creeks, and construction of recreation facilities.

On May 29, 1986 The State Reclamation Board signed the assurance agreement so that this project could move to construction. The first contract was awarded in September 1986. The Board supports the $3,900,000 that is in the President's Budget for the Phase II construction.

C. Lower San Joaquin River and Tributaries:

The Lower San Joaquin River was authorized in 1944 and by PL 98-63, the 1983 Supplemental Appropriations Act. The existing project completed in 1968 consists of channels, levees, and riverbank revetment from Friant Dam on the San Joaquin River to Stockton, a distance along the River of about 225 miles.

The needed work includes selective channel clearing and removal of debris and bars to restore channel capacity to historic levels on the San Joaquin River. Initial work in the Eastside Bypass has been done which was identified as an emergency situation. The next phase of the work will be covered in a joint EIS-EIR, which is being reviewed at this time.

The Reclamation Board supports the President's Budget of $1,002,000 for continuing the San Joaquin River construction project.

D. Merced County Streams:

This project, authorized in 1970, will provide flood protection for Castle Air Force Base, the City of Merced, and adjacent suburban and agricultural lands at an estimated federal cost of $73,400,000.

The Reclamation Board signed the assurance agreement for the first phase of this project on June 27, 1986 and supports the $2,400,000 that is in the President's Budget for the Merced County Streams Project.

E. Sacramento River and Major and Minor Tributaries:

Improvement of Sacramento River Major and Minor Tributaries was authorized in 1944 and further amended in 1950. This project provides for revetment for protection of bypass levee slopes against erosion. The bypass levee revetment features of the project will provide protection to flood plains adjacent to the bypasses and will decrease requirements for levee repairs under emergency conditions.

The Reclamation Board supports the $98,000 in the President's Budget for this project. This will conclude the remaining balance of project funds; any future work may be performed under the Sacramento River Bank Protection Project.

F. Sacramento River Bank Protection Project:

The project, authorized in 1960, is a long-range Federal-State effort, aimed at preserving the existing project levee system of the Sacramento River. These existing levees, which offer flood protection to the Central Valley over a reach of 192 miles, are very old and subject to constant erosion. The Sacramento River Bank Protection Project work consists of sloping and placing stone protection at those points which are identified each year as the most critical. Again in the February 1986 flood, increased damage occurred which further threatens existing project levees.

The Reclamation Board supports the $9,500,000 in the President's Budget for the Sacramento River Bank Protection Project.

G. Sacramento River - Chico Landing to Red Bluff Project:

This project, authorized in 1958, comprises extension and modification of the existing Sacramento River Flood Control Project by the construction of bank protection and minor channel improvements along the Sacramento River between Chico Landing and Red Bluff.

No construction work was accomplished in 1986. The Board supports a continuation of the Comprehensive Plan beginning at Reach 3 (Woodson Bridge) and working downstream. Because of environmental concerns of the Board and others, work on Reaches 1 and 2 will not proceed until a reevaluation of the plan is complete, except for emergency work. There are no funds in the President's Budget; however, the Board recommends $250,000 for continuing work necessary to reevaluate this project.

H. Sacramento River Flood Control Project:

This project was authorized in 1917 and modified by various Flood Control and/or River Harbor Acts in 1928, 1937, and 1941.

The project comprises a comprehensive system of levees, overflow weirs, drainage pumping plants, and flood bypass channels, extending along the Sacramento River from Collinsville near its mouth in Suisun Bay, upstream to Chico Landing, and along the lower reaches of principal tributaries; together with channel clearing, rectification, snagging and bank protection on the Sacramento River and tributaries.

Maintaining the stability of the project levees has been a continuing problem along Knights Landing Ridge Cut, the Colusa Basin Drain, and near the junction of Cache Slough and the Yolo Bypass. Slips in the Knights Landing Ridge Cut, Colusa Basin Drain and Cache Slough levees are recurring and, in the past, PL 99 emergency levee repairs have been accomplished to restore the levee grade and section. The Knights Landing/Colusa Drain levees protect about 100,000 acres of highly productive agricultural land, with about 2,000 people living within the area.

The Reclamation Board supports the $2,800,000 in the President's Budget to initiate construction of the cross levee on Cache Slough.

IV. Operations and Maintenance

Inspection of Completed Works - Sacramento River Flood Control Project

The Reclamation Board is concerned about the long-term integrity of the Sacramento River Flood Control System. The project is an integral part of the State's flood control plan and protects over one million people and billions of dollars in property. Portions of the project facilities are now over 100 years old; most are at least 50 years old. A break in the project levee on the Yuba River flooded thousands of homes in February 1986, and other areas within the project were seriously stressed. The Board believes it is time to consider the future of this project and the necessary measures required to sustain it as a viable, cost-effective, flood control system for the next 50 to 100 years.

The Reclamation Board is supporting $700,000 for the Corps to investigate the levee system around the Marysville-Yuba City area.

U. S. Bureau of Reclamation Projects

Auburn Dam:

Auburn Dam, part of the Central Valley Project, was authorized in 1965. Auburn Dam and Reservoir is located on the North Fork of the American River adjacent to the City of Auburn. The population centers of Sacramento, North Sacramento, Arden, Brighton, Carmichael, Fair Oaks, Folsom, and Rancho Cordova lie partially within the natural American River floodplain. The present Folsom Dam and levee system do not provide adequate flood protection against a Standard Project Flood. The part of the metropolitan Sacramento area that would be flooded by the Standard Project Flood is estimated to have a population of about 160,000 people, according to the 1980 census. Auburn Dam and Reservoir will provide additional flood protection to the population centers of the metropolitan Sacramento area.

In February 1986, flood releases from Folsom Dam exceeded the design capacity of the project levees through the City of Sacramento. It was made very clear that additional flood control measures are needed to protect the metropolitan areas.

The Reclamation Board supports the $1,000,000 in the President's Budget for continuing planning and design activities.

UNITED WATER CONSERVATION DISTRICT LOAN

STATEMENT OF JOHN K. FLYNN, SUPERVISOR, VENTURA COUNTY, CALIF. ACCOMPANIED BY CRAIG KAIHARA, DIRECTOR

Mr. HILL. The next witness is Mr. John K. Flynn, supervisor of Ventura County.

Senator COCHRAN. Welcome to the committee.

Mr. FLYNN. Thank you Mr. Chairman and Senator Wilson. I have with me today also the district manager for the United Water Conservation District, the applicant for the money for the project, and also Craig Kaihara, who is a district board of directors member.

I am speaking on behalf of the United Water Conservation District and the county of Ventura. This project is a very important one to our country and to the United District and I might say we have amended our request for funds from $14.5 million down to $7.3 million.

It is a project that has been approved by the Secretary of the Interior that has gone through all the environmental impact statement reports and has approval of all those. It is a project where lots of local money has gone into it in phase 1. It is a two-phase project.

Phase 1 has been paid for and completed. It was paid for by the local taxpayers of the state of California and the county of Ventura. Phase 2 is the project before us, and it is a request for $7.3 million to begin construction on a permanent diversion facility on the Santa Clara River.

Mr. Chairman, thank you very much for hearing our testimony today, and we promise if we get this loan, which it is, Public Law–984 loan; we promise to pay that loan back.

Senator COCHRAN. Thank you, Mr. Flynn.

[The statements follow:]

STATEMENT OF JOHN K. FLYNN, SUPERVISOR, VENTURA COUNTY BOARD OF SUPERVISORS, ON BEHALF OF THE VENTURA COUNTY AND VENTURA COUNTY FLOOD CONTROL DISTRICT, CALIF.

My name is John K. Flynn. As a member of the Ventura County Board of Supervisors, I represent the County of Ventura and the Ventura County Flood Control District.

I am appearing today to urge your inclusion of $14,550,000 in the Bureau of Reclamation's Budget for a PL 984 loan to the United Water Conservation District for the necessary construction of the Freeman Diversion project on the Santa Clara River in Ventura County, California.

Seawater intrusion poses a serious threat to continue agricultural production in a large portion of Ventura County. The Oxnard Plain, which has been farmed since the turn of the century, depends heavily on ground water as the source of water for irrigation. Heavy use of irrigation wells has caused ground water levels to decline which, in turn, has allowed saltwater from the adjacent Pacific Ocean to intrude in excess of 20 square miles of the upper aquifer under the Oxnard Plain. The immediate effect of this underflow is an inability to continue the use of wells for a water supply which, in turn, has affected the urban and agricultural communities supplied thereby.

In recognition of this problem, the Board of Supervisors of Ventura County, the United Water Conservation District, and the State of California have developed a project to increase utilization of an alternate water supply, the Santa Clara River, and to decrease pumping of water from the affected aquifer. Ordinances are in effect that prohibit further pumping from the aquifer and pipelines, terminal reservoirs, and new wells have been constructed to provide supplemental water to the area. Local and state expenditures to date approximate $15 million.

The keystone of this project is the Freeman Diversion Structure, a concrete stabilizer to be constructed in the Santa Clara River, that will allow increased amounts of water to be diverted from that river to provide users an alternative water supply through the pipelines and to recharge the ground water basin to halt and reverse the intrusion of saltwater under the Oxnard Plain.

Provision of $~~14,550,000~~ 7,300,000 in the Bureau of Reclamation's Budget for a PL 984 loan to the United Water Conservation District will enable continuation of the expeditious and economical completion of this most important project.

I urge you to fund this project in the amount specified.

Thank you for allowing me to present this Statement.

GJN:jg

STATEMENT OF G.I. WILDE, GENERAL MANAGER, UNITED WATER CONSERVATION DISTRICT, VENTURA COUNTY, CALIF.

Project:	Freeman Diversion Improvement Project
Request:	Provision for $7,300,000 of Appropriation in the Bureau of Reclamation's FY 1988 Federal Budget.
Purpose:	To provide funding, under a PL 84-984 Small Reclamation Projects Act Loan, for use in partial construction of the primary facility of the project for FY 1988.

Honorable J. Bennett Johnston, Chairman

My name is G. I. Wilde. I am General Manager and Chief Engineer of the United Water Conservation District.

I am here to request that you give every possible consideration to the inclusion of $7,300,000 in the FY 1988 Federal Budget to provide urgently needed funding for use in partial construction of the primary facility of the Freeman Diversion Improvement Project.

Under a Joint Powers Agreement, the United District and the County of Ventura are cooperatively engaged in addressing the very serious Seawater Intrusion problem under the lands of our Coastal Plain. A two-phase project is underway to resolve the problem. Phase I of that project has been completed, with an expenditure in excess of $15 million funded with local monies. The United District has allocated another $396,000 toward engineering and final design of Phase II, the Freeman Diversion Improvement Project, in order to advance the overall project schedule. Resolving the problem of seawater intrusion is of extreme urgency, and it is imperative that Phase II construction commence without further delay. The primary facility is the permanent diversion structure, extending 1200 linear feet across the river. Since it is an in-river facility, construction must commence as early in the year as the river channel can be occupied and the work expedited to a stage where the constructed works can safely accommodate the flood flows of the following season. Because of the magnitude of costs and current budgetary limitations, the plan is to phase construction into a two-year schedule. During the first year, the structure would be brought from its foundation level up to existing streambed level, at which it could safely pass the following winter's flood flows. Then in the second year, construction would be completed, together with the other appurtenant project facilities.

Appended is a Project Summary which provides an abstract tabulation of pertinent information and data relevant to the problem and the project. Your further review of this very serious problem of Seawater Intrusion and consideration for the urgency of our funding needs is respectfully requested.

Thank you for the opportunity of appearing before you today to request your support for assistance in this critically important matter.

PROJECT SUMMARY

PROJECT TITLE. FREEMAN DIVERSION IMPROVEMENT PROJECT

LOAN APPLICANT. United Water Conservation District of Ventura County, California

PROBLEM AND LOCATION. Seawater Intrusion on the Oxnard Coastal Plain, Ventura County, California, acknowledged to be by far the most severe problem of its kind in the State.

PROJECT PURPOSE. To increase diversions of Santa Clara River waters for use in controlling the advance of seawater intrusion into the underground aquifers of the Oxnard Plain.

PROJECT AREA STATISTICS:

Urban Area	30,050 Acres
Irrigated Agriculture	39,150 Acres
Total Area	69,200 Acres
Total Population	165,000
Annual Value of Agricultural Crops	196,000,000

ESTIMATED COST AND FINANCING PLAN.

Total Project Costs: ---------------------------------- $19,556,000
Financing: Federal loan, under the Small Reclamation Projects Act, PL 84-984, as amended.
Total Appropriation Requirement: -------------------- $18,730,000

APPROPRIATION REQUEST FOR FY 1988. The amount of $7,300,000 is requested for appropriation in FY 1988 to provide funding for construction on the primary facility of the project.

URGENCY FOR RESOLVING PROBLEM. Seawater has already intruded into the freshwater aquifers underlying 25% of the Oxnard Coastal Plain, as depicted on Figure I appended as the last page of this statement. Its further advance must be halted without delay, which is vital to preserving and maintaining the economy of the entire area.

STATEMENT OF LYNN E. MAULHARDT, PRESIDENT, UNITED WATER CONSERVATION DISTRICT, VENTURA COUNTY, CALIF.

Project:	Freeman Diversion Improvement Project
Request:	Provision for $14,550,000 of Appropriation in the Bureau of Reclamation's FY 1988 Federal Budget.
Purpose:	To provide funding, under a PL 84-984 Small Reclamation Projects Act Loan, for use in construction of the major in-river components of the project for FY 1988.

Honorable J. Bennett Johnston, Chairman

My name is Lynn E. Maulhardt. I am President of the United Water Conservation District Board of Directors.

I am here to request that you give every possible consideration to the inclusion of $14,550,000 in the FY 1988 Federal Budget to provide urgently needed funding for use in construction of the major in-river components of the Freeman Diversion Improvement Project.

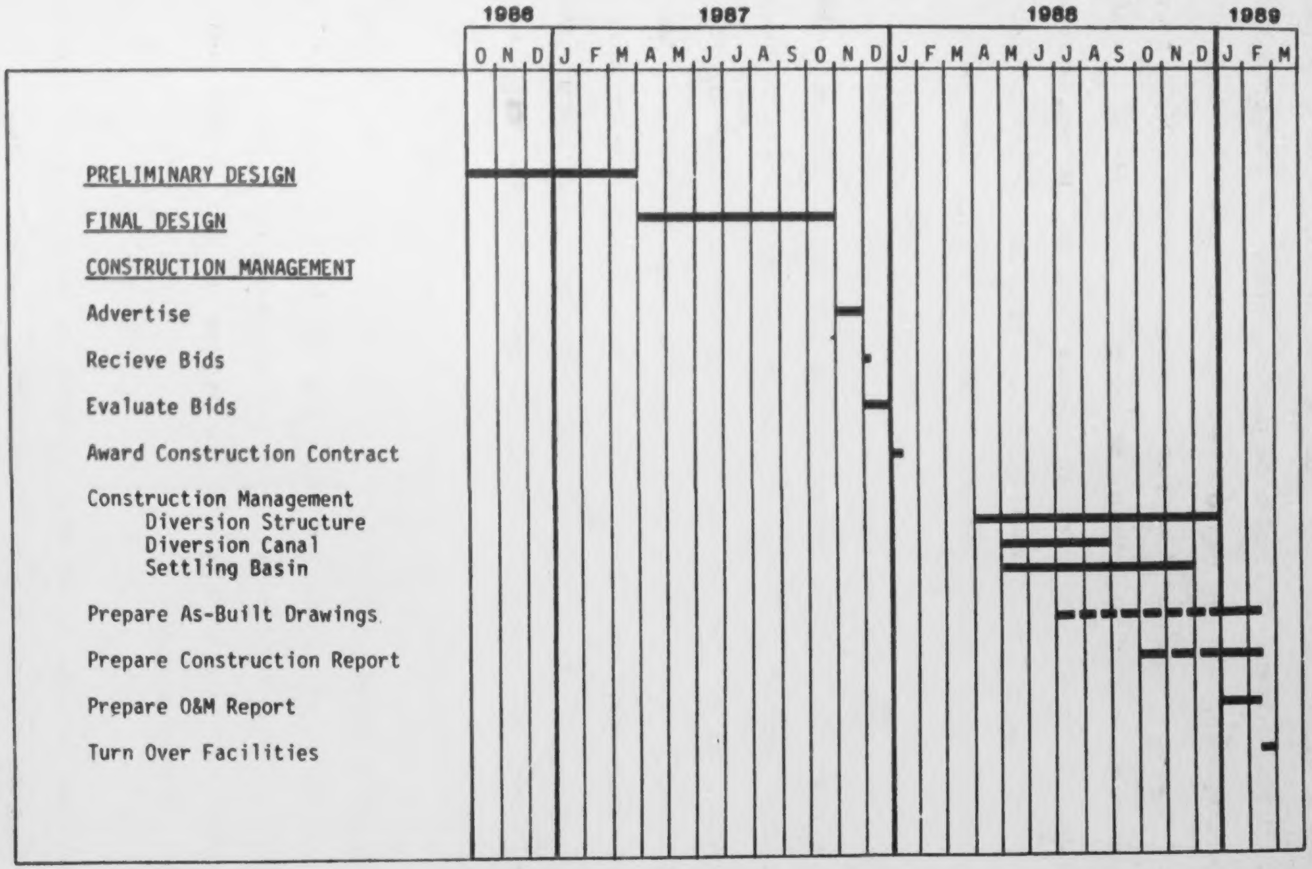
Under a Joint Powers Agreement, the United District and the County of Ventura are cooperatively engaged in addressing the very serious Seawater

Intrusion problem under the lands of our Coastal Plain. A two-phase project is underway to resolve the problem. Phase I of that project has been completed, with an expenditure in excess of $15 million funded with local monies. The United District has allocated another $396,000 toward engineering and final design of Phase II, the Freeman Diversion Improvement Project, in order to advance the overall project schedule. Resolving the problem of seawater intrusion is of extreme urgency, and it is imperative that Phase II construction commence without further delay.

It is recognized that our budget request is for a very substantial amount of appropriation. This results from the fact that our project involves primarily in-river facilities. Consequently, construction must commence as early in the year as the river channel can be occupied, thereby expediting the work to a point where the constructed works can safely accommodate the flood flows of the following season. The Construction Management and corresponding Expenditure schedules for meeting those requirements are appended as Dames & Moore Plate Nos. 11 and 11A, respectively.

Also appended is a Project Summary which provides an abstract tabulation of pertinent information and data relevant to the problem and the project. Your further review of this very serious problem of Seawater Intrusion and consideration for the urgency of our funding needs is respectfully requested.

Thank you for the opportunity of appearing before you today to request your support for assistance in this critically important matter.



CONSTRUCTION MANAGEMENT SCHEDULE
Freeman Diversion Improvement Project
Dames & Moore

FREEMAN DIVERSION PROJECT EXPENDITURE SCHEDULE

($1,000)

	PRE FY'87	FY 1987				FY 1988				FY 1989	
		1	2	3	4	1	2	3	4	1	2
Preliminary Design	125	10	244	142							
Final Design					250	250	200				
Construction Management								400	550	309	
Construction								4,700	7,800	3,100	576
Right of Way						550					
USBR	30			10	15	25	25	25	25	25	20
Loan Application	150										
Quarterly Total	–	10	244	152	265	875	225	5,125	8,375	3,434	596
Fiscal Year Total	305	671				14,550				4,030	
Project Total	19,556										

PROJECT SUMMARY

PROJECT TITLE. FREEMAN DIVERSION IMPROVEMENT PROJECT

LOAN APPLICANT. United Water Conservation District of Ventura County, California

PROBLEM AND LOCATION. Seawater Intrusion on the Oxnard Coastal Plain, Ventura County, California, acknowledged to be by far the most severe problem of its kind in the State.

PROJECT PURPOSE. To increase diversions of Santa Clara River waters for use in controlling the advance of seawater intrusion into the underground aquifers of the Oxnard Plain.

PROJECT AREA STATISTICS:

Urban Area	30,050 Acres
Irrigated Agriculture	39,150 Acres
Total Area	69,200 Acres
Total Population	165,000
Annual Value of Agricultural Crops	196,000,000

ESTIMATED COST AND FINANCING PLAN.

Total Project Costs: ---------- $19,556,000

Financing: Federal loan, under the Small Reclamation Projects Act, PL 84-984, as amended.

Total Appropriation Requirement: ---------- $18,730,000

APPROPRIATION REQUEST FOR FY 1988. The amount of $14,550,000 is requested for appropriation in FY 1988 to provide funding for the major part of the project construction.

URGENCY FOR RESOLVING PROBLEM. Seawater has already intruded into the freshwater aquifers underlying 25% of the Oxnard Coastal Plain, as depicted on Figure I appended as the last page of this statement. Its further advance must be halted without delay, which is vital to preserving and maintaining the economy of the entire area.

ELSINORE VALLEY MUNICIPAL WATER DISTRICT LOAN

PREPARED STATEMENT

Mr. HILL. Our next witness is Nancy Shafer, vice president, Elsinore Valley Municipal Water District, and accompanied by Arthur R. Bullock, general manager, and Doyle Boen, consultant on the Elsinore Valley loan. In the interest of time, they have submitted their statement.

[The statement follows:]

STATEMENT OF THE ELSINORE VALLEY MUNICIPAL WATER DISTRICT, CALIFORNIA

Mr. Chairman, I am Nancy Shafer, vice president of the board of directors of Elsinore Valley Municipal Water District, Lake Elsinore, Calif. The water district is the lead agency for the Lake Elsinore lake management project. This approved Bureau of Reclamation small loans project has been developed as a joint effort with the U.S. Corps of Engineers, State of California, County of Riverside, and city of Lake Elsinore.

I have been requested to appear before you on behalf of the water district and the entire area in asking your continued support by approving the $4.4 million which has been allocated in the 1988 budget. The importance of this project to the entire Elsinore Valley cannot be overstated. It will have a positive effect on the economic development, flood control, and the health, safety, and welfare of all the valley residents.

The city of Lake Elsinore will soon be celebrating it's 100th birthday and over that period of time the radical experience of the unmanaged lake level has been disastrous. As an example, in the late 1950's the lake completely dried up and became a dust bowl, the once prosperous valley was devastated. On the other side of the ledger, in 1980 the lake flooded causing over $70 million in damage and destruction—over 200 homes destroyed—another devastating experience.

Elsinore Valley Municipal Water District has an approved project under the Bureau of Reclamation small loans program and the design of the project is progressing. We are scheduled to be under construction in September or October of this year.

On behalf of the citizens of Elsinore Valley, I support the project and urge your approval of the $4.4 million in the 1988 budget to complete the design and to start the construction phase of the project.

SAN FELIPE DIVISION, CENTRAL VALLEY PROJECT, CALIFORNIA

Mr. HILL. The next item is the San Felipe Division of the Central Valley Project, Albert T. Henley, general counsel of Santa Clara Valley Water District. He has been back here so many times that he knows the situation and has submitted his statement for the record.

[The statement follows:]

STATEMENT OF THE SANTA CLARA VALLEY WATER DISTRICT, CALIF.

SUMMARY

The statement supports the President's fiscal year 1987–88 budget in the amount of $7 million for completion of construction by the Bureau of Reclamation of the Santa Clara and San Benito Counties phases of the San Felipe Division, Central Valley project, California.

My name is Albert Henley. I represent the Santa Clara Valley Water District, a local public agency of the State located in Santa Clara County, Calif.

The long-awaited first deliveries of supplemental water to service areas in Santa Clara and San Benito Counties from the San Felipe Division of the Central Valley Project are expected within a few months. By executed contract with the United States, Santa Clara Valley Water District will be accepting for maintenance and operation major distribution facilities of the system.

It is essential for the U.S. government and for the local agency accepting this responsibility that the facilities be in proper condition for such a transfer; that is, in full and faultless operating order. We are advised by the Bureu of Reclamation that, as with any construction project of this magnitude, unforeseen delays and changes have been encountered in the course of the work, and other such problems must realistically be expected. To meet these remaining problems, a further final expenditure is required.

The executive branch recommends an appropriation of $7,000,000 for continued San Felipe construction in the fiscal year beginning next October. We request your approval and concurrence.

We have appreciated the opportunity of presenting testimony before this committee today and on each occasion of our many prior appearances here.

PAJARO RIVER-UVAS CARNADERO AND COYOTE CREEK PROJECTS, CALIFORNIA

STATEMENT OF RONALD R. ESAU, ASSISTANT GENERAL MANAGER, SANTA CLARA VALLEY WATER DISTRICT, CALIF.

ACCOMPANIED BY MAYOR ROBERTA HUGHAN, GILROY, CALIF.

Mr. HILL. Our next speaker will be Ron Esau, assistant general manager, Santa Clara County Water District.

Ron?

Senator COCHRAN. Welcome, Mr. Esau.

Mr. ESAU. Thank you Mr. Chairman. Just very briefly, the Santa Clara Valley District is sponsoring not only the San Felipe water supply project, but we have three statements of support for Corps projects.

One is the Pajaro River-Uvas Carnadero; second, the survey of San Francisco Bay shoreline; and third, the Guadalupe River project in downtown San Jose.

Associated with that there is a subphase, for which we are asking one augmentation of the President's budget, and that is for $150,000 for design work on the Coyote Creek. We would respectfully ask your consideration of that slight change in our support statements.

The mayor of the city of Gilroy is here with respect to one of our projects and she would like to have just a moment.

Senator COCHRAN. We are happy to hear from her.

Mayor?

Ms. HUGHAN. Mr. Chairman, Senator Wilson, my name is Roberta Hughan. I am mayor of the city of Gilroy and I am here to bring my city's request for completion of the Uvas Carnadero project, which is in the President's budget and would amount to $1.8 million.

A year ago, February, we had a flood in our community that flooded about 200 homes and 20 businesses, $5 million damage. As a result of that I came back here last year to this committee to request the long-deferred startup funds of $0.5 million, and I bring very sincere thanks from our community, because you did include that in your budget and we have started the project.

I am sure you could hear their sigh of relief right here when they heard the news. Now, we need to finish the project and with the $1.8 million we can do that during fiscal year 1988.

Thank you.

Senator COCHRAN. Thank you Mayor Hughan.

Mr. Esau, thank you very much.

Mr. ESAU. Thank you.

[The statements follow:]

STATEMENT OF RONALD R. ESAU, ASSISTANT GENERAL MANAGER, SANTA CLARA VALLEY WATER DISTRICT, CALIF.

SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S 1987-88 BUDGET IN THE AMOUNT OF $625,000, TO CONTINUE DESIGN OF THE GUADALUPE RIVER PROJECT, AND REQUESTS THAT $150,000 BE AUGMENTED FOR COMMENCEMENT OF DESIGN ON COYOTE CREEK.

BACKGROUND

The Guadalupe River and Adjacent Streams Project and Study includes the Guadalupe River, Coyote Creek and Berryessa Creek. The Guadalupe River and Coyote Creek are the two major waterways that flow through the highly urbanized area of Santa Clara County, California. Historically, they have flooded the downtown areas of San Jose and Alviso beyond local capability to prevent. For example, on the Guadalupe River the estimated damages from a one percent or 100-year flood, which would inundate the urban center of San Jose, is $71,800,000. It is estimated that a 50-year flood on this river would cause $43,500,000 worth of damage under existing conditions. Damages on Coyote Creek would be $114 million during the 1% event to the north San Jose and Milpitas area. The probability of such floods occurring before implementation of flood prevention measures is quite high. A 50-year flood has an 18 percent chance of occurring during a 10-year period; a 100-year flood has about 10 percent chance of occurring during this same period. There is strong potential, therefore, that a damaging flood will occur before the problem can be resolved. The Guadalupe River had started to overflow its banks in April 1982 and January 1983 before the storm receded and avoided major damage. The Guadalupe River did overbank in February 1986 causing some damage to residences and business in the St. John and Pleasant Street area. Coyote Creek has caused the greater damages amounting to several million dollars, overbanking in April 1982 and again in March 1983. Hundreds of people were forced to evacuate their homes where floodwater stood for a substantial period of time.

STUDY SYNOPSIS

In 1971, the community requested the Corps of Engineers to reactivate its earlier study. The Plan of Study was completed in 1973. The initial problem definition and alternative screening was completed in 1974. More detailed problem definition and alternative studies for the Guadalupe River and Coyote Creek were completed in 1978. The third phase, study of freshwater flooding in the Baylands, was completed in 1979.

The Stage 2 report was completed for the combined Guadalupe River, Coyote Creek and Baylands. The report at that time established the financial feasibility and federal interest in the Guadalupe River. In light of severe flooding in 1982 and 1983, the Corps focused its study on Coyote Creek to address the inadequate level of protection provided by unstable levees. The study also includes Berryessa Creek, a major tributary to Coyote Creek.

In an effort to accelerate the completion of this overall program, the local community through the Santa Clara Valley Water District has provided a substantial amount of technical and financial assistance since 1972. Special planning studies have been completed by the District for inclusion into the Corps' studies at a cost of over $430,000. Both projects received authorizations under the Water Resources Development Act of 1976; the Guadalupe Project for Construction and the Coyote/Berryessa Project for Preconstruction (planning, engineering and design).

The severe flood problem and the ominous threat of future damages has forced the local community to initiate a local project on Coyote Creek in anticipation of future federal participation. Nearly $2.7 million has been spent on the planning, design and construction of improvements on Coyote Creek to date, which are planned for incorporation into the federal project.

FY 1987 FUNDING

Total funding for 1987 is $750,000 to begin the Preconstruction Engineering and Design on the Guadalupe River. No additional funding was required to complete the Coyote/Berryessa feasibility studies.

NECESSARY FY 1988 FUNDING

Funding for the Guadalupe River project during 1988 in the amount of $625,000 for Preconstruction Engineering and Design (PE&D) is essential to assure required design progress in anticipation of a future construction start as scheduled. Additional funding of $150,000 will be required for the initiation of the Coyote/Berryessa Creek PE&D, in anticipation of favorable action on the feasibility report by the Board of Engineers this year.

RECOMMENDATION

Based upon the present high flood risk and potential damage from the Guadalupe River and Coyote Creek, it is urgently requested that the President's 1987-88 Budget be supported in the amount of $625,000, to continue design of the Guadalupe River Project, and that $150,000 be augmented for commencement of design on Coyote Creek.

SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S 1987-88 BUDGET IN THE AMOUNT OF $600,000 FOR INTERIM I, II AND III OF THE CORPS OF ENGINEERS' AUTHORIZED SURVEY OF SAN FRANCISCO BAY SHORELINE, CALIFORNIA.

BACKGROUND

The Bayfront areas of many of the San Francisco Bay counties have been adversely affected by land surface subsidence and, as a result, military installations, extensive lands, thousands of homes, business establishments and industries are subject to hazardous inundation from tides of the Bay. In Santa Clara County alone, approximately 40 square miles of land surface area is adversely affected. This area houses a number of federal installations including the U. S. Naval Air Station at Moffett Field and the National Aeronautics and Space Administration's Ames Research Facility. Industrial productivity could be adversely affected by tidal flooding since defense industries such as Lockheed, and many electronics, aeronautics and space firms are located in the area. The study is essential, also, in order to permit and ensure integration of any flooding solution with protection of wetlands and wildlife refuges.

The saltwater flooding problem is particularly acute in northern Santa Clara County where the threat of flooding is an annual concern. The potential for damage grows with each year. A combination of high tides, high winds, and moderate river flows has resulted in the overtopping of the inadequate, unsound, privately-owned levee system in this area. The community of Alviso is especially vulnerable to this flood threat as evidenced by disastrous inundation in 1982 and 1983. In 1985 the Santa Clara Valley Water District completed a $1.0 million construction project which strengthened and heightened the levee west of Alviso providing limited protection to the community.

STUDY SYNOPSIS

This Corps of Engineers' survey was authorized by the 1976 Omnibus Rivers and Harbors Bill to examine the tidal flooding from San Francisco Bay. Funds were first appropriated in FY 1979 and the study has been initiated by the San Francisco District office of the U. S. Corps of Engineers. The study is being conducted in three phases with Santa Clara County and Southern Alameda counties included in Interim I. The remaining bay area counties are included in Interim II and Interim III. The San Francisco District held three broadly-based public meetings in January 1979 and also retained a consultant to define damage potentials and constraints and to assimilate the testimony requesting federal assistance given at those public hearings. Work in Fiscal Years 1983 consisted of topographic mapping, environmental and economic assessment of feasible actions. During Fiscal Year 84 and 85, the Corps continued refinement of studies and alternative analyses leading to a targeted draft study report in October 1987. A Final Report and EIS for Interim I is scheduled for July 1988.

Funds are needed to identify the hazards from tidal inundation with an objective, scientific study. Local agencies have neither the resources nor the geographical scope to deal with this problem which affects the entire San Francisco Bay Region. Local support is very strong.

FY 1987 FUNDING

The FY 1987 budget included $245,000 for Interim I of this project (South Alameda and Santa Clara Counties) and a total of $840,000 for the entire study.

FY 1988 FUNDING

Funding of $120,000 for Interim I and $480,000 for Interim II and III is required in FY 1988. These amounts totaling $600,000 are required to assure continued timely completion of all shoreline work under this authority.

RECOMMENDATION

We therefore urge support of the President's Budget for 1988 in the amount of $600,000 for Interims I, II and III.

SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S 1987-88 BUDGET IN THE AMOUNT OF $1,865,000 FOR COMPLETION OF CONSTRUCTION BY THE CORPS OF ENGINEERS OF THE PAJARO RIVER: UVAS-CARNADERO PROJECT, SANTA CLARA COUNTY, CALIFORNIA.

BACKGROUND

The Pajaro River: Uvas-Carnadero Creek Project is located in Gilroy in the southern part of Santa Clara County, California. Congress originally authorized a levee project along Uvas Creek in 1944. Subsequently a more comprehensive effort to study the entire Pajaro River Basin was authorized by Congress in 1945. A specific report on the Uvas-Carnadero Creek portion, now being constructed, was completed in August 1975.

The project is a single levee on the northwest side of the creek to prevent flood flows from entering the southern part of the City of Gilroy. In February 1981, a public meeting was held by the Corps of Engineers in Gilroy. The final General Design Memorandum was completed in September 1985. The project has an approximate $5.4 million total project cost and a 2.3:1 benefit to cost ratio.

The January 1982 flood, though not major in magnitude, seriously threatened the City of Gilroy. Emergency actions were necessary to prevent failure of the existing levee. However, on February 17, 1986 floodwaters exceeded the banks of Uvas Creek and flowed into 200 homes and 20 businesses causing damages exceeding $5 million. Floodwaters were greater than three feet deep.

The project will protect about 600 existing homes, a new high school and commercial and industrial establishments from flooding. This area is that which the City of Gilroy and the County of Santa Clara have designated for development in lieu of other areas easterly of the present city which are subject to more severe flooding and in which agricultural operations are to be preserved. The project will alleviate potential damages of $19.6 million during a 1% flood event.

STUDY SYNOPSIS

The final design is complete. The first stage of construction is expected to be advertised in May and a contract awarded in July 1987.

PRIOR FUNDING

In 1983 funding was provided in the final Continuing Appropriations Bill (Energy and Water portion) in the amount of $190,000. This provided sufficient funding to carry planning and design of the project through FY 1985 and to prepare the project for construction in FY 1986. No funding was appropriated for this project in FY 86. The first stage of construction was funded ($500,000) for FY 1987.

FY 1988 FUNDING

To complete construction in FY 1988, the federal budget requires $1,865,000.

RECOMMENDATION

Community development has long contemplated completion of this critically-needed protection project. The amount of $1,865,000 in the President's 1988 Budget should be supported to insure that construction is completed.

ADDITIONAL PREPARED STATEMENTS FOR THE RECORD

Mr. HILL. Our next one, the Merced County Stream Group, represented by Jay Anderson, has submitted a statement in the interest of time.

Also, the Santa Ana River main stem, Santa Ana River and Orange County survey, interim three, represented by Carl Nelson, director of public works; and George Osborne, both of whom are here. They have submitted their statement.

[The statements follow:]

STATEMENT OF JAY ANDERSON, SECRETARY, MERCED COUNTY STREAMS GROUP, CALIFORNIA

My name is Jay Anderson, Secretary of the Merced County Streams Group in Merced, California. I am representing the County of Merced who together with the State of California is the sponsor of the Merced County Streams Project: The County is joined by the Merced Irrigation District, the City of Merced, the El Nido Irrigation District and the Le Grand-Athlone Water District.

The plan formulated by the Corps of Engineers, Sacramento District, recommends the construction of dams on Canal and Black Rascal Creeks, the enlargement of the existing Bear Creek Dam together with improvement of approximately 34 miles of channels and levees which collectively would provide for protection to about 55,000 acres of urban and agricultural lands. A major Federal Benefit of this project is the construction of Castle Dam, on Canal Creek, which would provide protection to Castle Air Force Base, a major installation of the Strategic Air Command. Partial protection to this facility is presently provided by diverting flood waters into the canal system of the Merced Irrigation District. This practice not only damages the water distribution system but diverts the water into foreign flood plains already impacted. The City of Merced, with a population of approximately 45,000, will also greatly benefit through the reduction in the threat of flooding.

The agricultural areas subject to flooding are planted to a variety of tree, vines, and row crops and comprise some of the finest agricultural lands in the San Joaquin Valley. Less than 2% of the 1986 crop value was under any Federal or State subsidy.

The total Federal and Non-Federal cost of the project is estimated to be $92,200,000 and is economically feasible with a favorable benefit-cost ratio. Damages are estimated to be in excess of $7,000,000 per year without construction of the project. Portions of the project area were declared a Disaster Area due to heavy flooding in 1982-83.

Initial project studies by the Corps of Engineers were started in 1958 and led to Congressional authorization in 1970. Approximately $9,000,000 has been spent by the Corps on planning and design. On June 27, 1986 agreements between the Corps of Engineers and the California Reclamation Board were signed for the Castle Reservoir unit of the project. Contracts for this portion of the project are expected to be let in May 1987. The funds requested are for the completion of the Castle Reservoir phase.

The project has the support of State and local authorities and funding of the non-federal portion has been addressed.

We request your Committees support for the inclusion of $2,400,000 in the FY 87/88 budget as recommended by the California Water Commission, the Corps of Engineers, and the current administration. The allocation of this amount will allow for orderly progress of the Merced County Streams Project, which is so vital to the community, state and the nation.

STATEMENT OF ORANGE COUNTY (CALIF.) BOARD OF SUPERVISORS

I am Carl Nelson, Director of Public Works for the County of Orange, one of three counties in the watershed of the Santa Ana River, which is acknowledged as the greatest flood threat in the western United States.

The Orange County Board of Supervisors very much appreciates the work of the 99th Congress in securing the passage of Public Law 99-662 authorizing the Corps of Engineers to proceed with construction of the Santa Ana River Main Stem project. Upon completion this project will provide badly needed flood protection to the more than 2 million residents who live along the river within the counties of San Bernardino, Riverside and Orange.

The President's budget for FY 1988 includes $5,100,000 for advanced engineering design anticipating a completion of the Phase II General Design Memorandum in August, 1988. In order to assure that the project design will be completed on schedule, the Orange County Board of Supervisors has committed to entering a Memorandum of Agreement whereby the Orange County Flood Control District will supplement the available Congressional appropriations by the payment of $3 million in local funds during FY 1986, 1987, and 1988.

The Phase I General Design Memorandum approved by the Chief of Engineers in 1982 and submitted to the Congress in support of Congressional project authorization recommends that an advanced land acquisition fund be appropriated by the Congress in the amount of 7.5% of the total estimated real estate cost. It is extremely important that acquisition of the Prado Reservoir lands commence at an early date to relieve hardship cases where property values are affected by the impending acquisition. The Boards of Supervisors of San Bernardino, Riverside and Orange Counties have authorized their respective Board Chairman to sign the enclosed letter respectfully requesting the Congress to appropriate $10 million in FY 1988 for this purpose.

Mr. Chairman, previous Congressional support for the Santa Ana River Main Stem project is very much appreciated and on behalf of the Board of Supervisors of Orange County, California I respectfully request the approval of your committee for an appropriation of $15,100,000. We also support the President's budget in the amount of $350,000 for continued work on Interim Report III (West Orange County Flood Channels).

I appreciate the opportunity to appear before your committee on behalf of the 2,200,000 residents represented by the Board of Supervisors of Orange County, California.

STATEMENT OF SANTA ANA RIVER FLOOD PROTECTION AGENCY

Summary of Request:

Santa Ana River Main Stem Appropriations for FY 1988

The Santa Ana River Main Stem Project has been authorized by the enactment of the Public Law 99-662, the Water Resources Development Act of 1986.

For several years the Corps of Engineers has been planning and engineering the project under appropriations approved by your Committee and in anticipation of authorization of the project for construction. The Administration proposes $5.1 million for Fiscal 1988 to continue this work. This agency strongly supports this amount as it seems a reasonable and proper rate of expenditure to meet the Corps' target of completion of the Phase II General Design Memorandum (GDM) on schedule. This completion would make possible an actual start of construction in calendar 1989.

The Phase I GDM recommends advance land acquisition in Prado Reservoir. The possibility of increasing the size of Prado Basin was made public in the early 1970's and since that time this possibility, which has grown to a certainty with passing PL 99-662, has cast a long shadow on the future of private property in the reservoir's vicinity. In recent years a "take line" elevation of 566-feet has been agreed upon and used by local agencies in regulating land use to the extent possible and practicable. However, many hardships still exist for owners of homes and other improvements on lands below elevation 566-feet. Please consider appropriating money for advance purchase of property where genuine hardship exists. In general these will be people of modest means who are unable to sell their homes under the existing conditions. Whether Fiscal 1988 is the time for such an appropriation is unclear. If the question turns on there being in existence an executed agreement with local sponsors for what are sometimes termed the A, B and C's, then an appropriation for 1988 would be appropriate as the three counties and the Corps of Engineers are making rapid progress toward the agreement. If there are other reasons, then a deferment would be in order and this, of course, recognizes that in the larger picture, the federal deficit may govern.

In any event we urge an appropriation of up to $10 million for advance land acquisition at Prado at the earliest time possible and practicable.

STATEMENT OF ORANGE COUNTY, CALIF.

The Boards of Supervisors of Orange, Riverside, and San Bernardino Counties are very pleased with the passage of the Water Resources Development Act of 1986 (Public Law 99-662) and the inclusion in that Act the authorization of construction of the Santa Ana River Main Stem project. We have all worked diligently for over the past 20 years on this very important project and appreciate the support your Committee and the Congress have given to us in seeking our goals.

We are now moving forward to bring this project to the construction stage. In that regard, the President has recommended that 5.1 million dollars be appropriated to continue planning and engineering such that by mid-1988, the Phase II General Design Memorandum can be completed. We, of course, support that request. However, we feel there is an urgent need to provide funds to acquire certain properties needed for the Prado Dam and Reservoir enlargement to relieve serious hardships that have been incurred by some individuals whose properties are within the new reservoir. Some individuals have been unable to sell their homes and dairies in the Corona and Chino, California areas because of the "impending" project and acquisition by the Corps of Engineers.

Appendix E of the Phase I General Design Memorandum for the Santa Ana River Main Stem project contained a recommendation that Congress authorize an advanced land acquisition fund for the Santa Ana River Main Stem project in an amount estimated at 7.5 percent of the total estimated real estate costs. These funds would be used to relieve hardship cases as mentioned above and to acquire properties which are likely to escalate rapidly due to pending development. The real estate cost, as set forth in the Phase I report, is 163 million dollars. Thus, funding of 10 million dollars should meet the needs as identified in the Corps of Engineers report. Since the Santa Ana River Main Stem project is now authorized, it would appear the only action necessary would be for Congress to appropriate funds so these acquisitions can be commenced. We, therefore, request that your Committee appropriate 15.1 million dollars for the Santa Ana River Main Stem project for Fiscal Year 1988, of which 5.1 million would be for continued planning and engineering and 10 million dollars for land acquisition.

The three Counties' Boards of Supervisors jointly support this vital project and by this joint letter evidence their continue support. We appreciate your support for this appropriation request.

SANTA ANA RIVER MAIN STEM PROJECT, CALIFORNIA

STATEMENT OF MELBA DUNLAP, SUPERVISOR, RIVERSIDE COUNTY, CALIF.

Mr. HILL. Our next speaker is on the Santa Ana River main stem, represented by Melba Dunlap, supervisor, county of Riverside.

Senator COCHRAN. Ms. Dunlap, welcome.

Ms. DUNLAP. Thank you, Mr. Chairman. Thank you, too, Senator Wilson.

I am Melba Dunlap, chairman of the board of supervisors of Riverside County Flood Control and Water Conservation District. We really thank you and appreciate this opportunity.

I first wish to speak to you today about the Santa Ana River main stem project. We appreciate the support that this committee has provided over the years for this project, and speaking on behalf of the board of supervisors of Orange, Riverside, and San Bernardino Counties, I wish to confirm our continued support for the Santa Ana River project, and the funding in fiscal year 1988 as proposed in the President's budget to complete the engineering design of this project.

I would also like to speak to a matter of concern that we have in Riverside and San Bernardino Counties, particularly within my supervisorial district. We have several constituent homeowners whose homes will eventually be acquired for the modification and expansion of the Prado Dam and Reservoir.

From time to time, some of these people must move due to job transfers or other compelling reasons, but they are having difficulties selling their homes because of the impending acquisition of their property.

This creates a very real hardship for many of these individuals. We would like to see some funding made available for hardship property acquisition, in advance of the regular acquisition and construction at Prado Dam, which we feel is still several years away.

We have made a specific request in our written statement to go in the record and the chairman has received a letter signed by the chairman of the board of supervisors of Orange, Riverside, and San Bernardino Counties, requesting funding for these hardship acquisitions.

WHITEWATER RIVER FLOOD WARNING SYSTEM

Your favorable consideration of this matter in the fiscal year 1988 appropriation would be much appreciated. I also want to speak briefly on the need for a flood warning system on the Whitewater River basin in Riverside County.

The Whitewater River and its tributaries originate in the precipitous mountains surrounding Palm Springs and the Coachella Valley. Because of these steep mountains, flood flows accumulate rapidly on the valley floor.

Past floods in 1965, 1969, 1976, 1979, and 1980 have caused extensive damage and some loss of life. An advance flood warning system would minimize damages and loss of life by allowing officials to warn the public and take protective action.

The Water Resources Development Act of 1986 authorized $300,000 for a flood warning system for the Whitewater River basin. The Riverside County Flood Control and Water Conservation District and the Coachella Valley Water District have jointly agreed to operate and maintain the system.

We urge your committee to approve the $300,000 appropriation for fiscal year 1988 for this river basin flood warning system.

It is also my privilege at this time to speak on behalf of the city of Lake Elsinore and ask your support in appropriation of the President's recommendation for $4.4 million for their Lake Elsinore small loan project.

It is a loan, and this is an important project for the city of Lake Elsinore and the Riverside County Board of Supervisors certainly support that request.

We thank you very much for your past support and for the opportunity of meeting with your committee today.

Senator COCHRAN. Thank you very much.

[The statement follows:]

STATEMENT OF RIVERSIDE COUNTY (CALIF.) FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SUMMARY RECOMMENDATIONS

WHITEWATER RIVER FLOOD WARNING SYSTEM	$ 300,000
LAKE ELSINORE MANAGEMENT PROJECT	$ 4,400,000
Bureau of Reclamation Small Project Program	
SANTA ANA RIVER - MAIN STEM	$15,100,000
Pre-Construction Engineering and Design	
SANTA ANA RIVER AND ORANGE COUNTY	$ 650,000

WHITEWATER RIVER - FLOOD WARNING SYSTEM

The Water Resources Development Act of 1986 (Public Law 99-662) Section 1136 authorizes a flood warning system for the Whitewater River, San Bernardino and Riverside Counties, California. The area subjected to flooding and damages is located in the Coachella Valley portion of Riverside County. The Act further requires that the local agencies agree to operate and maintain such a flood warning system.

Damages to property and a potential for loss of life can occur as a result of flooding along the Whitewater River and its major tributaries as they traverse through Riverside County to the Salton Sea. Because of the very steep and precipitous nature of the mountainous watershed flooding can occur in the valley without much warning. Lives were lost in the floods of November 1965 on both the Whitewater River and a tributary stream. A flood warning system as authorized would provide sufficient advance warning to local agencies such that they can take action to minimize damages and loss of life.

An amount of $300,000 was authorized for this flood warning system. PL 99-662 did not become law until after the President had prepared the budget for FY 1988. We request your Committee approve $300,000 in the FY 1988 appropriation for a flood warning system for the Whitewater River, Riverside and San Bernardino Counties.

LAKE ELSINORE MANAGEMENT PROJECT

The Elsinore Valley Municipal Water District, the County of Riverside and the State of California, Department of Parks and Recreation, cooperated in the preparation of a study and report of the problems in stabilizing Lake Elsinore through flood control and water development improvements and enhancing the recreational opportunities of the lake under the provisions of the Small Reclamation Projects Act of 1956 (Public Law 84-984) as amended. The results of that study and report were that flood control improvements, water supply development, modification to operational size of the lake and recreational improvements were feasible.

The Elsinore Valley Municipal Water District, acting as the local sponsor, submitted the report entitled, Proposed Lake Elsinore Management Project, to the Bureau of Reclamation as an application for a loan and grant of $26,000,000 for the 39.7 million dollar project. The Secretary of Interior approved the loan and grant application in March 1985.

The Corps of Engineers completed a reconnaissance study in December 1985 under the provisions of Section 205 of the Flood Control Act of 1948 determining that certain flood control improvements along the lake outflow channel were feasible. The Riverside County Flood Control and Water Conservation District has entered into a project design study cost sharing agreement with the Corps of Engineers to complete the feasibility - design of the outflow channel in advance preparation for construction of the project as a Small Flood Control Project.

The Lake Management Plan which includes water development, lake stabilization and recreation will be closely interfaced with the Corps' flood control plan. It is vital that the design of these two projects go forward concurrently.

The President has included $4,400,000 in the FY 1988 budget for the Bureau of Reclamation for completion of engineering design and construction start of the Lake Elsinore Management Plan. We support the President's budget recommendation and urge the Committee to approve $4,400,000 for the Lake Elsinore Management Project loan in FY 1988.

SANTA ANA RIVER - MAIN STEM

The Water Resources Development Act of 1986 (Public Law 99-662) authorized the Santa Ana River - All River project which includes improvements along the river in Orange County, enlargement of Prado Dam and Reservoir near Corona, California, construction of a new dam (Seven Oaks) near the entrance to Santa Ana Canyon, improvement of the Oak Street Drain Channel in Corona, California, improvement of Santiago Creek in Orange County and various mitigation features as set forth in the Chief of Engineers' Report to the Secretary of the Army. The Boards of Supervisors of Orange, Riverside and San Bernardino Counties are in support of this needed project and have so stated in past resolutions to Congress.

The Corps is moving forward to bring this project to the construction stage. In that regard, the President has recommended that 5.1 million dollars be appropriated to continue planning and engineering such that by mid-1988 the Phase II General Design Memorandum can be completed. We support that request. However, we feel there is an urgent need to provide funds to acquire certain properties needed for the Prado Dam and Reservoir enlargement to relieve serious hardships that have been incurred by some individuals whose properties are within the new reservoir. Some individuals have been unable to sell their homes and dairies in the Corona and Chino, California areas because of the "impending" project and acquisition by the Corps of Engineers.

Appendix E of the Phase I General Design Memorandum for the Santa Ana River Main Stem project contained a recommendation that Congress authorize an advanced land acquisition fund for the Santa Ana River Main Stem project in an amount estimated at 7.5 percent of the total estimated real estate costs. These funds would be used to relieve hardship cases as mentioned above and to acquire properties which are likely to escalate rapidly due to pending development. The real estate cost, as set forth in the Phase I report, is 136 million dollars. Thus, funding of 10 million dollars should meet the needs as identified by the Corps of Engineers' Report.

We request your committee approve 15.1 million dollars in the FY 1988 appropriation for the Santa Ana River Main Stem project.

SANTA ANA RIVER AND ORANGE COUNTY

The Corps of Engineers has been studying certain specific flooding problems along streams tributary to the Santa Ana River and in Orange County since the mid 1970's. For the past four years they have concentrated efforts on a study of the flooding problems around Lake Elsinore in Riverside County. This study has resulted in the Corps and the Riverside County Flood Control and Water Conservation District proceeding with a Small Flood Control Project design at Lake Elsinore under provisions of Section 205 of the Flood Control Act of 1948.

There are also continuing studies that must be completed on other streams in Orange County (Interim Report No. 3) and tributary streams to the Santa Ana River in Riverside and San Bernardino Counties (Interim Report No. 2). Included in Interim Report No. 2 are studies of the feasibility of extending the levee along the San Jacinto River approximately four miles farther downstream. Flooding occurred along this reach of the river in 1978, 1979, 1980 and 1983 which required flood fight efforts to keep the stream within the existing banks. The flood of February 1980 breached the local levees and caused extensive flooding damages to valuable agricultural land, closed major roads and highways, destroyed one major county road and caused considerable economic losses in the Hemet-San Jacinto Valley in Riverside County. Riverside County, including this area, is the fastest growing area in the United States. Future floods will cause even greater economic loss.

The President's budget includes $650,000 for continuation and completion of these and other elements of this ongoing study. We urge the Committee to approve $650,000 for the Santa Ana River and Orange County studies for FY 1988.

SANTA ANA MAIN STEM PROJECT, CALIFORNIA

STATEMENT OF LARRY WALKER, SUPERVISOR, SAN BERNARDINO COUNTY, CALIF.

Mr. HILL. Our next one is item 10, Larry Walker, supervisor, San Bernardino County.

Larry?

Senator COCHRAN. Mr. Walker, welcome.

Mr. WALKER. Thank you, Mr. Chairman, Senator Wilson.

It is a pleasure to be here today to testify before you on this important set of projects involving flood control and water reclamation for our county.

As you have just heard, the Santa Ana River main stem project is an important regional issue in many of the counties of southern California.

We join in endorsing the President's budget to the extent that it provides an incremental amount of money for continuing the engineering and project development for that project.

San Bernardino County also joins in expressing a significant amount of concern in our request for an appropriation of $10 million for hardship land acquisition purchases.

We have homeowners who may need to move and can't sell their property because no one is going to buy a house that may be acquired by the federal government 2 years from now, 8 years from now, or 15 years from now.

At the same time, we have dairymen and others who are not sure how much they can invest on an ongoing basis in the maintenance and operation of their business, not knowing when the federal government will come into condemn.

The appropriation which is only about 7 percent of the total land acquisition cost involved in this major flood control project will still be at least a first installment, which will have the dual positive benefit of:

No. 1, overcoming a substantial amount of personal hardship; and No. 2, which will save the Federal government substantial sums of money over the years in terms of acquiring land which is under significant pressure for price increase over the next few years.

On a second item involved in San Bernardino County, we have a Bureau of Reclamation small project requesting $13.5 million total loan during the life of the project. On a $40 million project, the balance of which is going to be paid for from local funds.

This year we understand that the project is ready for signature by the Secretary of the Interior. We are simply asking this committee to support the appropriation of $1 million for a new start for what is a critical water reclamation project for the coming fiscal year.

I thank you very much for the opportunity to present this to you.

[The statement follows:]

STATEMENT OF SAN BERNARDINO COUNTY (CALIF.) BOARD OF SUPERVISORS

The Board of Supervisors of the San Bernardino County Flood Control District, State of California, appreciates the opportunity to submit this most critical flood control proposal for consideration in the 1987/1988 budget:

SANTA ANA RIVER MAIN STEM "All River Plan" Including Seven Oaks Dam and Mill Creek Levee.	$5,100,000

Our request includes $5.1 million for continued planning and engineering and $10 million to relieve serious right-of-way hardships that have been incurred because of the "impending" project and acquisition by the Corps of Engineers.

Your approval of this urgent project recommendation will be a continued step toward flood protection for San Bernardino County, as well as Riverside and Orange Counties.

This Board once again wishes to express deep appreciation for your past and present support of this program of priority concern, to the County, to the State and Federal Government.

SANTA ANA RIVER MAIN STEM

ALL RIVER PLAN INCLUDING UPPER SANTA ANA RIVER DAM

The Santa Ana River as indicated by the Corps of Engineers Studies has one of the highest priorities in the United State. Future floods could cause an estimated 9.2 billion in damage and would jeopardize the lives of over 1.8 million people. The recommended "All River Plan", provides for upstream protection which includes Seven Oaks Dam, and Mill Creek Levees, assuring flood regulation from the mouth of the Santa Ana River downstream through San Bernardino and Riverside Counties to the existing Prado Dam and Reservoir. With the Downstream Protection which includes improvement of Prado Dam, Oak Street Drain, Santiago Creek, and Lower Santa Ana River Channel through the downstream areas of Orange County, will afford badly needed flood protection to one of the major metropolitan areas of Southern California.

Approval of 15,100,000 by Appropriations Committees and Congress is requested. 5.1 million in the Presidents Budget and recommended by the State of California is to complete General Design Memorandum No. II, Continue Pre Construction Engineering and Design.

$10 million to relieve serious hardships that have been incurred because of the "impending" project and acquisition by the Corps of Engineers.

PROJECT AUTHORIZED:	Public Law 94-587, Section 109, 94th Congress Second Session, Approved on October 22, 1976.
TOTAL PLANNING AND ENGINEERING FUND:	$26,100,000
PRIOR PLANNING AND ENGINEERING FUND:	$18,723,000
STATE OF CALIFORNIA WATER COMMISSION RECOMMENDATIONS Fiscal Year 1987-88:	$5,100,000
PRESIDENT'S BUDGET Fiscal Year 1987-88	$5,100,000

REQUIRED ACTION: Approval OF $15,100,000 by Appropriations Committees and Congress.

a) $5,100,000 to complete GDM No. II., and continue Pre Construction, Engineering Design.

b) $10,000,000 to relieve serious hardships because of the "impending" Project.

MINUTES OF THE BOARD OF SUPERVISORS
OF SAN BERNARDINO COUNTY, CALIFORNIA
MARCH 2, 1987

On motion of Supervisor Mikels, duly seconded by Supervisor Riordan, and carried, the following resolution is adopted by the Board of Supervisors of the County of San Bernardino, State of California:

RESOLUTION NO. 87-78

WHEREAS, on March 6, 1987, the State Water Commission will adopt final recommendations for Fiscal Year 1987-88 funding for water and flood control projects; and

WHEREAS, these recommendations will be submitted to the Congressional Appropriations Committee; and

WHEREAS, there are several projects needed to solve serious flood control problems in San Bernardino County;

NOW, THEREFORE, BE IT RESOLVED that the San Bernardino County Board of Supervisors strongly supports and recommends the following projects:

PROJECT	PRESIDENT'S BUDGET	S.B. COUNTY RECOMMENDATION MARCH 2, 1987
U.S. ARMY CORPS OF ENGINEERS		
1. SANTA ANA RIVER MAIN STEM - "ALL RIVER PLAN" INCLUDING SEVEN OAKS DAM AND MILL CREEK LEVEES General Investigation	$ 5,100,000	$ 5,100,000
BUREAU OF RECLAMATION		
1. DAY CREEK WATER CONSERVATION PROJECT	-0-	$ 1,000,000

PASSED AND ADOPTED by the Board of Supervisors of the County of San Bernardino, State of California, by the following votes:

AYES: SUPERVISORS: Mikels, Riordan, Walker, Hammock, Joyner

NOES: SUPERVISORS: None

ABSENT: SUPERVISORS: None

* * * * * *

STATE OF CALIFORNIA
COUNTY OF SAN BERNARDINO } ss.

I, MARTHA M. SCUDDER Clerk of the Board of Supervisors of the County of San Bernardino, State of California, hereby certify the foregoing to be a full, true and correct copy of the record of the action taken by said Board of Supervisors, by vote of the members present, as the same appears in the Official Minutes of said Board at its meeting of March 2, 1987. dm #28

MARTHA M. SCUDDER
Clerk of the Board

By ______________ Deputy

LOS ANGELES COUNTY DRAINAGE AREA STUDY

STATEMENT OF CHRISTIAN DATWYLER, ASSISTANT DEPUTY DIRECTOR, LOS ANGELES COUNTY PUBLIC WORKS

Mr. HILL. Our next witness is Chris Datwyler representing Los Angeles County.

Chris?

Senator COCHRAN. Mr. Datwyler, welcome to the committee.

Mr. DATWYLER. Thank you, Mr. Chairman.

I am Chris Datwyler, assistant deputy director of the Los Angeles County Department of Public Works. We strongly support the President's budget and the California Water Commission's recommendations for an allocation of $650,000 for a continuation of the Los Angeles County drainage area study.

Because of the seriousness of the anticipated deficiencies in major elements of our flood control system, which this study will address, we further urge that the Congress consider authorizing construction of remedial work as soon as the study is finished.

Thank you very much.

Senator COCHRAN. Thank you for being here.

[The statement follows:]

STATEMENT OF N.C. DATWYLER, ASSISTANT DEPUTY DIRECTOR, DEPARTMENT OF PUBLIC WORKS, LOS ANGELES COUNTY, CALIF.

Summary of recommendation by Los Angeles County Department of Public Works concerning the budget allocations to the U.S. Army Corps of Engineers:

> Los Angeles County Drainage Area (LACDA) Study - We strongly support the President's budget and the California Water Commission's recommendations for an allocation of $650,000 for continuation of the LACDA Study. Because of the seriousness of the anticipated deficiencies in major elements of our flood control system, we further urge that Congress consider authorizing construction of the remedial work as soon as this study is completed.

Mr. Chairman and Gentlemen:

The drainage system that serves most of the 8.0 million residents of Los Angeles County is one of the most extensive flood conrol and water conservation systems ever built in the United States. The economy and the well being of the residents of the nation's second largest metropolitan area is directly dependent on the protection afforded by this system.

Flooding which occurred in the Los Angeles Basin prior to the construction of the existing dams and channels was responsible for the taking of lives, damaging of property, and interrupting commerce and trade. The level of flooding was so great that at times, the County was isolated from the rest of the nation.

The Corps of Engineers began construction of major elements of the system in the 1930s. Since the major segments were completed, it is estimated that the system has prevented $3.3 billion in potential flood damage. Unfortunately, some of its design capacity was based on studies of population projections made in the 1930's which did not anticipate the extensive development of the Los Angeles basin which occurred following World War II. Actual development has been greater than anticipated, resulting in significantly increased storm runoff which the existing system may not be able to carry.

The Los Angeles County Drainage Area Study was started in 1972 when it was realized that much more extensive urbanization had occurred than was assumed by the designers of the system. The purpose of the study is to determine if the major elements of the system are adequate, and if they are not, to recommend appropriate cost-effective mitigation measures to correct the identified deficiencies.

Preliminary indications from the LACDA review study indicate that the level of protection offered by some major existing facilities may be significantly less than originally intended. Our own experience during the wet years of 1978, 1980, and 1983 caused us to conclude that there are major deficiencies in the system. The level of protection afforded by the Los Angeles River is probably the most serious of these deficiencies. Overflow from the Los Angeles River or San Gabriel River during a major storm event could jeopardize homes and businesses along the river.

We feel it is very vital to the residents of Los Angeles County that the Corps be fully funded to complete this study expeditiously so that construction of critically needed drainage facilities can begin as soon as possible. It is anticipated that the Corps will complete the Study in June 1989. We therefore strongly urge that Congress give high priority to the funding of the LACDA Study at the $650,000 level proposed in the President's budget and that because of the magnitude and seriousness of the problem, consider authorizing construction of the remedial work contingent upon submittal of the Report on the LACDA Study by the Secretary of the Army.

STATEMENT OF MICHAEL A. CATINO, MANAGER, CALIFORNIA CENTRAL VALLEY FLOOD CONTROL ASSOCIATION

Mr. HILL. Next is Mike Catino, manager of the California Central Valley Flood Control Association.

Senator COCHRAN. Mr. Catino, go ahead.

Mr. CATINO. I am Mike Catino. I am the manager of the California Flood Control Association and the Central Valley Project Water Association.

We would like to point out to you, Mr. Chairman, that we support the recommendations of the California Water Commission on all of the projects they have listed.

Also, we reinforce the statement of Mr. Barsch on flood control projects as relative to the Central Valley Project program items. We want to emphasize, Mr. Chairman, that the $34 million for operating and maintaining the Central Valley Project is completely deficient by about $10 million.

I am the former regional director of the Bureau of Reclamation and I know it takes $44 million to operate that project. There is not enough money in there for extraordinary maintenance items, replacements, and additions, which are common to a 35-year-old project such as the Central Valley Project.

In another area is the need for delta support studies, which are voided in the President's budget under the general investigations fund. My association is raising $0.5 million to defend the water contracts of the Bureau of Reclamation, and its own as well, before the State Water Resources Control Board.

I thank you for the opportunity, Mr. Chairman to be here and present my statement.

[The statements follow:]

STATEMENT OF MICHAEL A. CATINO, MANAGER, CALIFORNIA CENTRAL VALLEY FLOOD CONTROL ASSOCIATION

Mr. Chairman and Members of the Committee: I am Michael Catino, Manager of the California Central Valley Flood Control Association (CCVFCA). We appreciate the opportunity to come before you to present our recommendations for Fiscal Year 1988 appropriations.

The Association which I represent was organized in 1926, prior to any major State or Federal water and energy projects, and since that date has been a proponent of all of these developments in California. Seventy-five Reclamation, Levee Maintenance, and Flood Control Districts, Cities and Counties comprise its membership; located south from Red Bluff to Manteca, California, and containing 900,000 acres along the Sacramento and San Joaquin Rivers and Delta areas.

In February of 1986 Northern California suffered another devastating flood period. The Sacramento Valley and Delta area levees sustained significant damages. Restoration of these facilities has been excellently accomplished by the Corps of Engineers. During the current fiscal year all of the 21 major construction contracts are essentially complete. With this aspect of flood control near end it is necessary to return to the basic programs with some fund requirements over those included in the President's budget for Fiscal Year 1988.

This Association recommends the following budget considerations:

CORPS OF ENGINEERS

General Investigations

Northern California Streams - Dry Creek Placer and Sacramento Counties

President's FY 1988 Budget	$75,000
CCVFCA Recommendation	$75,000

The Dry Creek area from Placer to Sacramento County drains a substantial urban area which sustained significant flood damage in 1986. The area, formerly rural, has been and will continue to be populated without appropriate flood control facilities. It is essential that this study consider the local effects and the impacts of its drainage on the City and County of Sacramento.

Inspection of Completed Works - Sacramento River Flood Control Project (Operations and Maintenance)

President's FY 1988 Budget	$ 0
CCVFCA Recommendation	$700,000

In view of the 1986 floods and the impact on existing facilities there is the requirement to examine many of the existing structures to ascertain their future capability and the required rehabilitation

Cache Creek - Lake and Yolo Counties

President's FY 1988 Budget	$280,000
CCVFCA Recommendation	$530,000

This $3 million study has been in continuance for many years and it is vital to conclude a final course of action without delay. The augmentation of $270,000 will hasten the plan to provide solutions for the following:

- Flooding around Clear Lake
- Sedimentation in the lower basin
- The sedimentation basin has lost its capability accordingly to develop an alternate
- Reducing the sedimentation in the Yolo Bypass and improving the flow characteristics of the Sacramento River Flood Control Project.

Construction - General

Sacramento River, Chico Landing to Red Bluff

President's FY 1988 Budget	$ 0
CCVFCA Recommendation	$250,000

A delay in this construction program will aggrevate the current condition which is not the most favorable. Work in overall plan consists of five reaches for 49 miles along the Sacramento River. A special type of construction namely the "Palisades" was introduced near the Woodson Bridge Area. It is being evaluated; however, the remaining reaches should be attended to without delay to permit the evaluation to run concurrently. The funds being asked for augmentation will permit continuing alternative studies and designs as well as the environmental considerations.

In summary, the California Central Valley Flood Control Association recommends, in its area of concern, the following budget amounts for the Corps of Engineers:

	President's Budget	CCVFCA Recommendation
	($000's)	
General Investigations - Surveys		
Northern California Streams	75	75
Sacramento-San Joaquin Delta	210	210
Northern California Streams - Sacramento Metro Area Interim	450	450
Inspection of Completed Works Sacramento River Flood Control Project (O&M	0	700
American River Watershed	200	200
Blue Ridge	100	100
General Investigations - Pre Const. E&D		
Cache Creek	280	530

Construction - General

Lower San Joaquin River and Tributaries	1,002	1,002
Sacramento River - Major and Minor Tributaries	98	98
Sacramento River Bank Protection	9,500	9,500
Sacramento River, Chico Landing to Red Bluff	0	250
Sacramento River Flood Control Project	2,800	2,800

Summary (Bureau of Reclamation)

	President's FY 1988 Budget	CVPWA Recommendations
	$000's	
General Investigation (GI)		
I. Delta Support Studies - General	817[1]	583
II. Delta Support Studies - Suisun Marsh	0	15,560[2]
III. Delta Support Studies - D-1485 Monitoring	0	650
Kellogg Unit-CVP-Contra Costa Co.	0	75
Off-Stream Storage	0	363
San Joaquin Valley Conveyance Study	0	450
Delta Water Management Program	0	565
Minor Work in connection with Completed Projects	0	55
Environmental and Interagency Coordinated Activities	0	625
Refuge Water Supply	0	25
Technical Assistance to States	0	75
Spring Creek Toxicity Control Study-Shasta County	0	350
Subtotal (GI)	0	19,376
Special		
Coleman Fish Hatchery (USFWL Service Project-Shasta and Tehama Counties	0	9,940[2]
Construction and Rehabilitation (C&R)		
Central Valley Project		
Sacramento River Division	4,644	4,644
Auburn-Folsom So. Unit	1,000	1,000[3]
San Luis Unit	17,941	17,941
Trinity River Division-Restoration Program	5,105	5,105
San Felipe Division	7,000	7,000
Subtotal (C&R)	35,690	35,690

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[1] Memo only-$409 is budgeted in Construction and $408 in Operations & Maintenance.

[2] Could be included under Construction and Rehabilitation.

[3] Includes funds for State's Parks and Recreation and Forestry Department for services and General Surveillance of reservoir area. Hardly any funds are available for advancing the project status.

Summary (Bureau of Reclamation)

	President's FY 1988 Budget	CVPWA Recommendations
	$000's	
Operations and Maintenance		
Central Valley Project	34,872	44,872
Total	70,562	109,878
General Investigation (GI)		
I. Delta Support Studies - General	817[1]	583
II. Delta Support Studies - Suisun Marsh	0	15,560[2]
III. Delta Support Studies - D-1485 Monitoring	0	650
Kellogg Unit-CVP-Contra Costa Co.	0	75
Off-Stream Storage	0	363
San Joaquin Valley Conveyance Study	0	450
Delta Water Management Program	0	565
Minor Work in connection with Completed Projects	0	55
Environmental and Interagency Coordinated Activities	0	625
Refuge Water Supply	0	25
Technical Assistance to States	0	75
Spring Creek Toxicity Control Study-Shasta County	0	350
Subtotal (GI)	0	19,376
Special		
Coleman Fish Hatchery (USFWL Service Project-Shasta and Tehama Counties	0	9,940[2]
Construction and Rehabilitation (C&R)		
Central Valley Project		
Sacramento River Division	4,644	4,644
Auburn-Folsom So. Unit	1,000	1,000[3]
San Luis Unit	17,941	17,941
Trinity River Division-Restoration Program	5,105	5,105
San Felipe Division	7,000	7,000
Subtotal (C&R)	35,690	35,690
Operations and Maintenance		
Central Valley Project	34,872	44,872
Total	70,562	109,878

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[1] Memo only-$409 is budgeted in Construction and $408 in Operations & Maintenance.

[2] Could be included under Construction and Rehabilitation.

[3] Includes funds for State's Parks and Recreation and Forestry Department for services and General Surveillance of reservoir area. Hardly any funds are available for advancing the project status.

III. Delta Support Studies - D-1485 Monitoring

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$650,000

The State Water Resources Control Board (SWRCB) will be conducting reviews and hearings over the next 3 years commencing in 1987. The Bureau of Reclamation is without funding to directly participate in the above activity to protect the various water right permits on which the CVP has operated since its early construction days, and support the many water uses of its contractors.

This Association (CVPWA) and other local, State and Federal agencies will be presenting testimony in support of their "beneficial uses of water" as mandated by the Appellate Court Decision which requires the SWRCB to conduct these Hearings. The CVPWA has had to raise nearly $500,000 as its cost sharing for participation in supporting the CVP water rights and primarily the water contracts it holds with the Project. The Bureau of Reclamation needs to be an active participant throughout the contemplated 3 years of Hearings.

Feasibility Investigations - Special

Kellogg Unit - CVP - Contra Costa County

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$75,000

This investigation has been on-going for many years and recently established that the Highline Canal is the preferred alternate for the relocation of the Contra Costa Canal intake from Rock Slough to the Clifton Court Forebay where the water quality is generally better. This Highline Canal can also serve as a delivery source from the planned Kellogg or Los Vaqueros Reservoirs. The Contra Costa Water District supports the Highline Canal and is in the process of purchasing the reservoir sites. Failure to provide Federal funding will delay this cooperative work with the water district and State agencies when decisions are near at hand. Of special consideration is any disruption in the Delta area, such as levee breaks with attendant potential salinity intrusion can impact the chemical constituents of the water district's drinking water standards as prescribed by EPA.

Off Stream Storage

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$363,000

The Bureau of Reclamation is about 50 percent complete on this $900,000 study which consists of evaluating many potential water storage sites for storage of surplus supplies in the eastern and western San Joaquin Valley. These evaluations are coordinated with the proposed Mid-Valley Unit - CVP study which has identified a need for additional water supplies to alleviate ground-water depletion of nearly one million acre-feet per year. Failure to maintain a continuance of this study is costly with associated related future delays in the decision-making process.

San Joaquin Valley Conveyance Study

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$450,000

For the past 4 years the Bureau of Reclamation, State Department of Water Resources and the local Mid-Valley Water Authority have carried out joint studies for conveying water from the Delta to eastern San Joaquin Valley. A "Status Report" on various alternatives was completed in

October 1986 and the associated environmental assessment is underway and will be completed in FY 1987. A bill, H.R. 572, was introduced in the House on January 8, 1987, and in the Senate on February 26, 1987 for authorization of the Mid-Valley Unit - CVP which is covered by this study. The Water Authority has shared in funds and services for this study. For FY 1988 they will again participate to assist in the finalization of preparatory work for project authorization.

Delta Water Management Program

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$565,000

This program is in support of the State Department of Water Resources various studies dealing with Delta problems, determining the size of an additional Federal increment in a Delta water transfer plan, seismic design requirements of Delta facilities, evaluating subsidence levels and initiating public involvement activities. The future operations of the CVP and SWP warrant such a study activity to finalize on the impacting causes in the Delta and the corrective measures required.

Minor Work in Connection with Completed Projects

Presidents FY 1988 Budget	$ 0
CVPWA Recommendation	$55,000

These funds are required to finalize reports after the project studies have been completed at the field level. These reports must be approved at the Washington level and submitted to State and other Federal agencies for review prior to submittal to Congress. This continuing type of work is essential to placing proper conclusions to the many program activities.

Environmental and Interagency Coordination Activities

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$625,000

This program centers around the National Environmental Policy Act of 1969 and various administration initiatives concerning water resources planning standards. These prescribed elements include irrigation benefit studies for the Corps of Engineers, Public Hearings, preparation of data for various public groups, participation with other State and Federal study items, etc. These day-to-day work items are essential to carrying out the Bureau of Reclamation's mission in water resource developments.

Refuge Water Supply

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$25,000

In the passage of H.R. 3113 a requirement was established for supplying CVP water to various refuges in the CVP service area. This requirement withholds 25 percent of available water supplies until the needs are established. Since future sales of water to districts is dependent on this study it is important to finalize the requirements at the earliest date.

Technical Assistance to States

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$75,000

This program contemplates providing technical data, knowledge and expertise to the States to aid the allocation of water resources and user needs. It is essential for the Bureau of Reclamation to maintain this traditional role in the development of water resources in the 17 Western States.

Spring Creek Toxicity Control Study - Shasta County

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$350,000

The operations of the Spring Creek Debris Dam and the entrance flows to the dam must be controlled to avoid poisoning the fish habitat of the Sacramento River. Some studies have progressed during the past several years and it is important to finalize solutions. Many State and Federal agencies are involved in this study and only partial solutions have been completed to date.

Coleman Fish Hatchery - U.S. Fish and Wildlife Service Project Shasta and Tehama Counties

President's FY 1988 Budget	$ 0
CVPWA Recommendation	$9,940,000

The Hatchery was established in the early days of the CVP along with construction of Shasta and Keswick Dams. This facility is in need of rehabilitation and has losts its full effectiveness to cope with the salmon and steelhead populations of the Northern Sacramento River. Failure to move on these restorations will cause further deterioration.

Operations and Maintenance

Central Valley Project

President's FY 1988 Budget	$34,872,000
CVPWA Recommendation	$44,872,000

This program entity requires significant attention if the project is to satisfactorily perform its operations as in the past and to retain equitable maintenance of equipment and structures. The budget must include $3.3 and $5.7 million, respectively, for transfer of funds to the Friant Water Users Authority (Friant-Kern Canal) and the State Water Project (San Luis Unit) for contracted operations and maintenance.

For your information the current Fiscal Year 1987 expenditures funded for the Project amounts to $43,234,000. The proposed Fiscal Year 1988 Budget of $34,872,000 is a reduction of $8,362,000. From our review of this program and its details we concluded there is a backlog of extraordinary maintenance and replacement work. We request that you consider supporting a capability of $10 million to bring this program level up to $44,872,000. This compares to the current funding of $43,234,000.

The Project is basically 35 years old and needs continuing updating and repair to substantiate a high degree of service.

The above $10 million capability would include such items as detailed below:

- Repair lining on Tehama-Colusa Canal spawning channel.
- Rehabilitate gates on Delta-Mendota Canal.
- Dredge intake channels to Tracy and O'Neill Pumping Plants.
- Repair and seal roads at Shasta Dam and San Luis Unit.
- Delta operational studies.

- Land classification work to support the provisions of the Reclamation Reform Act.
- Rehabilitate Gantry Cranes at Friant Dam and Tracy Pumping Plant.
- Rewind Keswick Powerplant Units.
- Replace PCB transformers and miscellaneous equipment at O'Neill Pump/Generator Plant, Tracy Fish Screens and Spring Creek Powerplant.
- Recondition Folsom warehouse crane and modify elevators at Folsom Dam and Powerplant; as well as replacing the voltage regulators at the plant.
- Rewedge New Melones power units.
- Many other miscellaneous items and contracts, materials, supplies, and equipment.
- Salaries for proper retention of competent staff members to avoid reduction-in-force.

ADDITIONAL PREPARED STATEMENT

Senator COCHRAN. Thank you, Mr. Catino.

Mr. HILL. Next, I have a statement submitted by Robert Beach, general manager, Sonoma County Water Agency on the Dry Creek project. He has submitted his statement in the interest of time.

[The statement follows:]

STATEMENT OF ROBERT F. BEACH, GENERAL MANAGER, SONOMA COUNTY (CALIF.) WATER AGENCY

Mr. Chairman and Members of the Subcommittee -- I am Robert F. Beach, General Manager of the Sonoma County Water Agency (State of California). We urge that the subcommittee support the request for $8.2 million included in President Reagan's proposed budget for the Warm Springs Dam - Lake Sonoma Project in Sonoma County California.

For the past twenty-six years we have annually represe[illegible] to you our support for the Warm Springs Dam Project. We have recounted floods and droughts and described the benefits that would flow from the completion of this project. Those benefits are now [illegible] reality. The U. S. Army Corps of Engineers closed the outlet [illegible] gates and began deliberate impoundment of water two years ago last November. During the massive rainstorms that swept Northern California a year ago, the project demonstrated its flood control value by reducing what was nevertheless a record flood stage in the lower Russian River by several feet, preventing enormous additional damage.

The construction work planned for next year consists principally of bank stabilization work along Dry Creek and the completion of the minimal recreation plan. The bank stabilization work is necessary to mitigate the bank erosion caused by the changed flow regimen in Dry Creek which resulted from the Project. This work has long been identified as an integral element of the Project. Implementation has been deferred pending a definition of the necessary work which has now been completed.

The proposed recreation facilities included in the minimal recreation plan are only a fraction of those contemplated in the Lake Sonoma Master Plan. The prospect of these basic recreational facilities was clearly a major consideration in the decision to sponsor the project and in the subsequent referenda supporting the Warm Springs Dam Project. Failure to complete these facilities as proposed in the budget request would place the County of Sonoma in a most difficult position.

Between the Corps and the County, many millions of dollars have been spent to improve, realign or construct approximately 38 miles of road to and on the Warm Springs Dam recreational site. These roads provide excellent access to all parts of the lake. The availability of water and open public land will create a major attraction with excellent access within a short drive from most of the highly urbanized San Francisco Bay Area. The County currently can visualize no effective means of controlling this access. Consequently, major problems can be anticipated for the County that would result from the failure of the Corps and the federal government to fulfill previous understandings and obligations to provide satisfactory organized recreational facilities designed to accommodate the anticipated visitor traffic. A partial list of expected problems would include:

1. Inability to control individuals from entering undeveloped areas resulting in inappropriate camping, fishing and hunting, poor sanitation, high fire danger, and difficult evacuation in the event of illness or injury;

2. Environmental degradation of the area because of potential foot, animal, or vehicle traffic in areas not appropriately improved to handle this access;

3. Substantial and costly law enforcement requirements to attempt to control traffic and access to the area.

We appreciate the support the Warm Springs Dam Project has received from this subcommittee over the years and look forward with great anticipation to the full realization of the flood control, water supply and recreational benefits of the project.

STATEMENT OF GEORGE BARBER, CHAIRMAN, SAN JOAQUIN COUNTY SUPERVISORS

Mr. HILL. Next, we have George Barber, chairman of the San Joaquin County Board of Supervisors.

Senator COCHRAN. Mr. Barber, we are glad to have you here.

Mr. BARBER. Thank you, Mr. Chairman, it is a pleasure to be with you this afternoon. I am representing the board of supervisors as well as the San Joaquin County Flood Control Water Conservation District, and I am president of the San Joaquin Water Users Association.

We are here today to support a variety of projects, which I will simply itemize in the interest of time.

Basically, the New Melones project, Lower San Joaquin River clearing and snagging, San Francisco Bay to Stockton ship channel deepening, Calaveras River project, Sacramento-San Joaquin delta investigation, Auburn-Folsom South unit, the Oakdale Irrigation District loan, delta support studies and delta monitoring.

I would point out that all of these projects are recommended by the state committeee They also are in the President's budget and are within the Corps' capabilities to perform.

The one exception is the Calaveras River study, which is recommended by the state. It is a $450,000 item. I would like to point out that all of the agency's recommendations are not in the President's budget, as I understand it, but all the other agencies have recommended it.

The Stockton East Water District is willing and capable of providing the local match as necessary and have submitted a letter to us so stating. I would like to submit the rest of the remarks for the record.

Senator COCHRAN. Thank you very much for your assistance to the committee.

Mr. HILL. Thank you.

[The statement follows:]

STATEMENT OF GEORGE L. BARBER, CHAIRMAN OF THE BOARD OF SUPERVISORS, SAN JOAQUIN COUNTY, CALIF.

Mr. Chairman and Members of the Committee:

My name is George L. Barber. I am Chairman of the Board of Supervisors of the County of San Joaquin, California.

In summary, the County of San Joaquin requests that the following appropriations be made to the Corps of Engineers and the Bureau of Reclamation for the fiscal year between October 1, 1987, and September 30, 1988, for projects of concern to the County:

Corps of Engineers - Construction	
New Melones Project	$ 4,100,000
Lower San Joaquin River Clearing and Snagging	$ 1,002,000
San Francisco Bay to Stockton Ship Channel Deepening	$ 2,700,000
Corps of Engineers - Investigations	
Calaveras River	$ 450,000
Sacramento-San Joaquin Delta Investigation	$ 210,000
Bureau of Reclamation - Construction	
Auburn-Folsom South Unit	$ 1,000,000
Bureau of Reclamation - Loan Program	
Oakdale Irrigation District Loan	$ 1,957,000
Bureau of Reclamation - Investigations	
Delta Support Studies	$ 1,400,000
Delta Monitoring	$ 650,000

DETAILED COMMENTS

Corps of Engineers - Construction

New Melones Project............................$4,100,000

The New Melones Dam, Reservoir, and Power Plant are complete for operational purposes and all State permits necessary to permit full, authorized operation are in the Bureau's hands. The project has provided tremendous flood control benefits during the spring of 1986. Water quality, fishery, and power benefits and irrigation benefits were also available in recent years. These benefits are assured for the future.

The President's budget provides $4,100,000 for completion of remaining facilities and requirements of the project. We believe that this project should be completed so that it can serve all its authorized purposes and can maximize its benefits.

Lower San Joaquin River Clearing and Snagging...$1,002,000

Much of the Lower San Joaquin River channel upstream of Mossdale has become choked with sediment and debris as a result of upstream erosion and past floods. It is essential to continue this channel clearing program on the river system so that it can carry its design flood flows without endangering adjacent properties. We support the funds included in the President's budget for this essential work.

San Francisco Bay to Stockton Ship Channel
Deepening..................................$2,700,000

The San Francisco to Stockton Ship Channel has been deepened to 35 feet. An additional $2,700,000 is required for completion of remaining project requirements. We support the funds included in the President's budget for this work.

Corps of Engineers - Investigations

Calaveras River..............................$ 450,000

During the February 1986 flooding the Calaveras River system came extremely close to failing. Because of the large urban community depending on this system, it is essential that the Calaveras River be studied to determine what additional facilities are required to alleviate this problem. We request the appropriation of $450,000 to allow a reconnaissance study. If a project is defined for a feasibility study, the Stockton East Water District has committed to pay for the share of such a study.

Sacramento-San Joaquin Delta Investigation......$ 210,000

This study is to determine how the levees within the Sacramento-San Joaquin Delta can be rehabilitated to assure stability and provide seepage control. These levees provide protection to many fertile acres of farm land and adjacent communities. They also provide waterways that are used extensively for boating and recreation. Some of the levees are essential in limiting the tidal effects which cause salt water intrusion into the Delta channels. We support the funds included in the President's budget for these studies.

Bureau of Reclamation - Construction

Auburn-Folsom South Unit........................$1,000,000

Recent information made available regarding the cost of the construction of Auburn Dam is under review for the Federal-State Task Force. A specific recommendation regarding the construction of Auburn Dam should be available within the next few months and the Bureau of Reclamation will need to proceed with studies required to modify its design in accordance with this recommendation. Water supplies which can be made available by Auburn Dam and Reservoir are essential to the resolution of the minimum flow problems in the Lower American River and to provide water for use in the Folsom South Canal service area.

The most important program of the Auburn-South Unit is the Folsom South Canal, which now ends 10 miles north of the San Joaquin County line. San Joaquin County, through its Flood Control and Water Conservation District, completed a comprehensive groundwater management study of the portion of the County that would be served water from the canal. This study has provided the County with useful information on conjunctive use of groundwater in sustaining a presently developed agricultural area which is primarily in pasture, vineyard, row and orchard crops. The County is currently evaluating this information to accurately determine its needs of water from the Folsom South Canal.

The County believes that the Bureau should now be making studies toward eventual extension of the Canal into the County to deliver supplemental water. This information, together with environmental impact statements relating to the service area, will be required for support of contracts for the supplemental water.

Bureau of Reclamation - Loan Program

Oakdale Irrigation District Loan...............	$ 1,957,000

The Bureau and O.I.D. have executed a loan contract and construction is under way. The budgeted $1,957,000 in fiscal year 1987-88 will be used to continue construction of the system improvements. It is expected that when completed, the system will be far more efficient and will conserve much water now unavoidably lost.

Bureau of Reclamation - Investigations

Delta Support Studies..........................	$1,400,000

A wide variety of analyses and studies are required in the Sacramento-San Joaquin Delta in connection with the existing and potential problems. Many of these programs involve cooperation with the State of California since both the State Water Project and the Federal Central Valley Project use the Delta as a means of conveying water across the Delta to their export pumping plants.

The State expends large sums in studying the effects of the cross-Delta flows on water quality in the Delta and on export waters and in studying the effects of Project operations on the fishery resources and Delta channels. The Bureau should have comparable funds with which to discharge its responsibilities toward the Delta.

We urge urge that the appropriations include an amount of $1,400,000 for these studies.

Delta Monitoring............................	$ 650,000

An essential program is the Sacramento-San Joaquin Delta water monitoring program which provides the necessary data to determine the effects of the Federal Central Valley Project on the Delta. The Bureau should provide its share of the funds to be included with those furnished by the State of California.

We urge the appropriation for this purpose in the amount of $650,000.

STATEMENT OF BARBARA FASS, MAYOR, STOCKTON, CALIF.

Mr. HILL. Our next witness is Barbara Fass, mayor of the city of Stockton.

Ms. FASS. Good afternoon. Thank you, Mr Chairman for listening to us today.

I would support the remarks by Mr. Barber from the board of supervisors and add that I would like to submit for the record, the statement from Stockton East Water committing themselves to the $600,000 matching funds for the project spoken to.

We are in the unique position of being the largest inland seaport in the area, thus requiring your assistance in finishing the port, which provides employment for a community that boarders on 20-percent unemployment throughout the course of the years.

We also require funding to clean up the Delta River and to provide flood protection in years that we have had great problems with floods.

In addition we are facing the salinization of our underground water and require the rest of the flooding to bring in surface water. So, we are in the unique position of tying together all of the needs of California in one community.

We appreciate your support and thank you.

Senator COCHRAN. Thank you Mayor Fass. We appreciate your testimony.

[The statement follows:]

STATEMENT OF BARBARA FASS, MAYOR, STOCKTON, CALIF.

I am Mayor Barbara Fass of the City of Stockton, California, authorized by the Stockton City Council to make this statement before your honorable body today.

The City of Stockton supports the Corps of Engineers and Bureau of Reclamation surveys, flood control and reclamation projects in the following amounts:

1.	New Melones Project	$4,100,000
2.	Deepening of the Stockton Ship Channel to 35 feet and realigning part of the Channel	2,700,000
3.	Lower San Joaquin River Clearing and Snagging	1,002,000
4.	Sacramento-San Joaquin Delta Investigation	210,000
5.	San Joaquin River Basin Survey - Calaveras River	450,000
6.	Auburn-Folsom South	1,000,000
7.	Delta Support Studies	17,610,000

FLOOD CONTROL -- CORPS OF ENGINEERS

NEW MELONES PROJECT-------------------------------$4,100,000

The President's budget provides $4,100,000 for completion of remaining facilities and requirements of the project. This project should be completed so that it can serve all its authorized purposes and can maximize its benefits.

SAN FRANCISCO BAY TO STOCKTON SHIP CHANNEL DEEPENING--$2,700,000

The President's budget contains $2,700,000 for fish and wildlife enhancement after the completion of the dredging operations. The City supports the full appropriation in order for fish and wildlife to be enhanced.

LOWER SAN JOAQUIN RIVER CLEARING AND SNAGGING--------$1,002,000

Much of the Lower San Joaquin River channel upstream of Mossdale has become choked with sediment and debris as a result of upstream erosion and past floods. The City supports the President's budget to continue this channel clearing program on the river system so that it can carry its design flood flows without endangering adjacent properties.

SURVEY -- CORPS OF ENGINEERS

SACRAMENTO-SAN JOAQUIN DELTA INVESTIGATION--------------$210,000

This study is to determine how the levees within the Sacramento-San Joaquin Delta can be rehabilitated to assure stability and provide seepage control. These levees provide protection to farm land and adjacent communities and to waterways which are used extensively for boating and recreation. Some of the levees are essential in limiting the tidal effects which cause salt water intrusion into the Delta channels. The City supports the funds included in the President's budget and recommended by the California Water Commission.

SAN JOAQUIN RIVER BASIN-CALAVERAS RIVER-----------------$450,000

Due to the heavy rainfall last year, it was apparent that flood control protection for the Stockton Metropolitan area needs to be bolstered. Flow data available showed that runoff below New Hogan Reservoir caused near flood conditions in 1986. The City endorses the California Water Commission's recommendation for a General Investigation Survey of the Calaveras River in the amount of $450,000.

BUREAU OF RECLAMATION

AUBURN-FOLSOM SOUTH UNIT------------------------------$1,000,000

The President's budget contains $1,000,000 for work in fiscal year 1987/88. A Federal-State Task Force is reviewing data regarding the cost of the construction of Auburn Dam. The task force will make a recommendation in a few months regarding construction of Auburn Dam. The Bureau of Reclamation will need to do studies in order to modify its design in accordance with the recommendation. Water supplies which can be made available by the Auburn Dam and Reservoir are essential to resolve minimum flow problems in the Lower American River and to provide a water supply to the Folsom South Canal service area.

The most important program of the Auburn-South Unit is the Folsom South Canal, which now ends ten miles north of the San Joaquin County line. San Joaquin County completed a comprehensive groundwater management study of the portion of the County that would be served water from the Canal. This study has provided useful information on conjunctive use of groundwater in sustaining a developed agricultural area which is primarily in pasture, vineyard, row and orchard crops.

The Bureau should be conducting studies toward eventual extension of the Canal into the County to deliver supplemental water. This information, together with environmental impact statements relating to the service area, will be required for support of contracts for the supplemental water.

DELTA SUPPORT STUDIES-----------------------------$17,610,000

A wide variety of analyses and studies are required in the Sacramento-San Joaquin Delta in connection with the existing and potential problems. Many of these programs involve cooperation with the State of California since both the State Water Project and the Federal Central Valley Project use the Delta as a means of conveying water across the Delta to their export pumping plants.

The State expends large sums in studying the effects of the cross-Delta flows on water quality in the Delta and on export waters and in studying the effects of Project operations on the fishery resources and Delta channels. The Bureau should have comparable funds with which to discharge its responsibilities toward the Delta.

We support the California Water Commission's recommendation in the amount of $17,610,000 consisting of delta-wide studies at $1,897,000, plus $15,560,000 for the Suisun Marsh.

Resolution No. 87-0168

STOCKTON CITY COUNCIL

WHEREAS, on April 1, 1987, appropriate committees of the Congress of the United States will conduct hearings to consider Federal Appropriations for flood control, reclamation, and navigational projects and surveys for fiscal year 1987/88; and

WHEREAS, several projects and surveys to be considered at said Congressional hearings will be of benefit to the City of Stockton and its environs; and

WHEREAS, the expeditious construction of said projects and completion of said surveys is required to protect the health, welfare and safety of the residents of this area; now therefore

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF STOCKTON, AS FOLLOWS:

That the City of Stockton does hereby support the appropriation by the Congress of the United States of funds for fiscal year 1987/88 for the planning, continuation and completion of flood control, reclamation, and navigational projects and surveys; namely, NEW MELONES PROJECT, SAN FRANCISCO BAY TO STOCKTON SHIP CHANNEL DEEPENING, LOWER SAN JOAQUIN RIVER CLEARING AND SNAGGING, SACRAMENTO-SAN JOAQUIN DELTA INVESTIGATION, SAN JOAQUIN RIVER BASIN SURVEY-CALAVERAS RIVER, AUBURN-FOLSOM SOUTH AND DELTA SUPPORT STUDIES which affect the City of Stockton and its environs; be it

FURTHER RESOLVED, that the representative of the City of Stockton, Mayor Barbara Fass, is authorized to appear before appropriate committees of the Congress of the United States on

April 1, 1987 for the purpose of making presentations consistent with this resolution; be it

FURTHER RESOLVED, that the City Manager is hereby authorized and directed to send copies of this resolution to the Honorable Alan Cranston, the Honorable Peter Wilson, the Honorable Norman Shumway and the Honorable Richard Lehman.

PASSED, APPROVED and ADOPTED this 23rd day of March, 1987.

/S/ BARBARA FASS

BARBARA FASS, Mayor
City of Stockton

ATTEST:

/S/ FRANCES HONG

FRANCES HONG, City Clerk
City of Stockton

I, Frances Hong, certify that this document is a true and correct copy of Resolution No. 87-0168 adopted by the City Council of the City of Stockton on March 23, 1987 and on file in the office of the City Clerk of the City of Stockton.

Dated: March 24, 1987

Frances Hong
City Clerk of the City of Stockton
By
Deputy

CALIENTE CREEK FLOOD CONTROL STUDY, CALIFORNIA

STATEMENT OF BEN AUSTIN, SECOND DISTRICT SUPERVISOR, KERN COUNTY, CALIF.

ACCOMPANIED BY:

STU PILE, ENGINEER MANAGER, KERN COUNTY WATER AGENCY
RANDALL ABBOTT, DIRECTOR, PLANNING AND DEVELOPMENT SERVICES

Mr. HILL. Our next is Ben Austin, second district supervisor of Kern County.

Senator COCHRAN. Mr. Austin, welcome.

Mr. AUSTIN. Thank you, Mr. Chairman. I am Ben Austin supervisor of the second district of Kern County in California.

I appear before you today on behalf of the Kern County Board of Supervisors, the Kern County Water Agency, and other local agencies in total support of the Caliente Creek flood control project.

I would like to take this time to note that we have two other representatives here with me: Stu Pile, who represents the Kern County Water Agency as their engineer manager, and Randall Abbott, the planning director.

Our particular concern today is the fiscal year 1987–88 funding to begin the preconstruction engineering and design work for the Caliente Creek flood project in Kern County.

We are supporting the President's budget proposed allocation of the $100,000 for this purpose and request your support as well. We sincerely appreciate the past support of this committee.

As you know, the Caliente Creek flood control project is the first federal project in the nation for which local interest matched the federal government dollar for dollar to pay for the feasibility study.

In fact, our cost is about 3 to 1 of the amount of money that we paid out for this study. It will be completed in 1988. In addition to meeting our share of the study cost, we plan to meet our share of the construction cost as well.

We deeply appreciate your continued support in our goal to realize a total solution to the Caliente Creek flooding problem, which caused more than $37 million in damage during the 1978 and 1983 floods.

Thank you very much for your support and we would like to make a special comment regarding the Corps of Engineers allocating this as one of their top projects in California.

Thank you very much.

Senator COCHRAN. Thank you, Mr. Austin. Thanks for your testimony and your assistance.

[The statements follow:]

STATEMENT OF BEN AUSTIN, SUPERVISOR, KERN COUNTY, CALIF.

Dear Mr. Chairman and Members of this Subcommittee:

I am Ben Austin, supervisor of the second district, Kern County, California. I appear before you today on behalf of the Kern County Board of Supervisors, the Kern County Water Agency, and several local districts who share an interest in the Caliente Creek Flood Control Project. I would like to take this opportunity to note two Kern County representatives who are here with me today: Kern County Department of Planning and Development Studies Director Randall L. Abbott and Kern County Water Agency Engineer-Manager Stuart T. Pyle.

Our particular concern today is Fiscal Year 1987-88 funding to begin preconstruction, engineering and design work for the Caliente Creek flood control project in Kern County. We are supporting the President's Budget proposed allocation of $100,000 for this purpose, and request your support as well.

The preconstruction design work is planned to begin in July, 1988. Presently, work is in progress to complete a draft feasibility report, which will be released for public review and comment in July of this year. A final report will be completed and released by February, 1988. We are confident of a positive feasibility rating for the project, and hope to see Congressional authorization for construction by 1989.

The Caliente Creek Flood Control Project has broad local support, and is the first Federal project in the nation for which local interests matched the Federal government dollar for dollar in meeting feasibility study costs. Under the cost-sharing agreement between the Corps of Engineers and the Kern County Water Agency, local interests have committed $350,000, of which half is cash and the other half in-kind services. Arvin-Edison Water Storage District, Kern Delta Water District and Lamont Storm Water District are cooperating with the Board of Supervisors and Kern County Water Agency in our commitment to solve

Caliente Creek flooding problems as expediently and efficiently as possible.

In addition to meeting our share of the study costs, we plan to meet our share of the construction costs. Through the Caliente Creek Flood Control Task Force, we are already working to identify and implement an appropriate local organizational structure through which we can raise the financial resources necessary for our share of project construction costs.

Again, I urge your continued support for the Caliente project and hope that you will support the $100,000 allocation in the proposed FY 87-88 budget.

Thank you for your consideration.

STATEMENT OF KERN COUNTY WATER AGENCY, CALIFORNIA

Dear Mr. Chairman and Members of this Subcommittee:

I am Henry C. Garnett, president of the board of directors of the Kern County Water Agency in Bakersfield, California. The Agency's interest today is Fiscal Year 1987-88 funding to begin preconstruction, engineering and design work for the Caliente Creek flood control project in Kern County. We are supporting the President's Budget proposed allocation of $100,000 for this purpose, and request your support as well.

The preconstruction design work is planned to begin in July, 1988. Presently, work is in progress to complete a draft feasibility report, which will be released for public review and comment in July of this year. A final report will be completed and released by February, 1988. We are confident of a positive feasibility rating for the project, and hope to see Congressional authorization for construction by 1989.

As I'm sure you recall, the Kern County Water Agency entered into a 50-50 cost-sharing agreement with the Corps of Engineers to pay for the feasibility study; this agreement was the first in the nation to be implemented for feasibility studies. Under the agreement, the Agency has committed $350,000, of which half is cash and the other half in-kind services for the study.

We deeply appreciate the support you and this subcommittee have given to the Caliente Creek project over the last few years. The Caliente flooding problem is serious, with damages from the 1983 and 1978 floods together totaling more than $36 million. The Kern County Board of Supervisors, Arvin-Edison Water Storage District, Kern Delta Water District and the Lamont Storm Water District have joined the Agency in a concerted, unified effort to achieve a solution as soon as possible so that damages such as those that were incurred during the historic floods of 1983 and 1978 will never have to be experienced again.

In addition to the financial commitment we have made to the feasibility study, we expect to cost-share the construction phase of the project as well. Although actual construction is a few years away, we are already in the process of identifying and implementing the appropriate local organizational structure to develop the financial resources for project construction, operation and maintenance.

Again, we urge your continued support for the Caliente project and hope that you will support the $100,000 allocation in the proposed FY 87-88 budget to begin preconstruction engineering and design work for the project.

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OAKDALE IRRIGATION DISTRICT LOAN

STATEMENT OF F. RICHARD LUTZ, PRESIDENT, OAKDALE IRRIGATION DISTRICT

Mr. HILL. Our next is Mr. Richard Lutz, president of the Oakdale Irrigation District.

Mr. LUTZ. Mr. Chairman, Senator Wilson, we have submitted a written testimony, and I am going to keep my remarks very brief.

This is our last year of a 4-year project to convert open ditches to pipelines. We have installed 48 miles of 18-inch to 54-inch diameter concrete pipe, which is about 17 percent of our system.

Customers numbering 2,146 have a new delivery system; 16,000 acres have improved services. All water users in the district will benefit because of lower maintenance cost and greater conservation of water.

Once again, I am happy to report that we are on target, on schedule, and on budget. We are in the President's budget for $253,000 to complete this project. We are asking for and would appreciate your continued support.

Thank you.

Senator COCHRAN. Mr. Lutz, thank you very much. As president of that district, we appreciate your being here.

[The statement follows:]

STATEMENT OF THE OAKDALE (CALIF.) IRRIGATION DISTRICT

The Oakdale Irrigation District appreciates the efforts of you and your committee for having obtained an appropriation of $4,100,000 for fiscal year 1987. The third year of construction on the system's rehabilitation project was recently completed and is now more efficiently irrigating 4,790 acres of land through 45 miles of new pipeline serving 2,133 constituents.

The rehabilitation project of our 75-year-old system from open ditch laterals to pipeline will result in conservation of 50,000 acre-feet of water annually when the project is completed; 50 percent of which is immediately effective through the work completed. The piped system will also increase our ability to control water and provide better water management. This project is consistent with the President's philosophy and policy on cost sharing as follows:

Federal loan	$17,845,000
District contribution	4,244,000
Total project cost	22,089,000

The President's budget for the Bureau of Reclamation's loan program indicates $0.253 million for the Oakdale Irrigation District in fiscal year 1987, the last construction year of this project. We support this appropriation as being within our capabilities to administer.

The SRPA program has enjoyed the support of Congress for over 25 years. The loans are repaid 100 percent, some with interest. The money is used for facilities that make possible the continued production of food and fiber, as well as the creation of permanent jobs.

Your assistance and continued support or the completion of our project is greatly appreciated.

ADDITIONAL SUBMITTED STATEMENTS FOR THE RECORD

Mr. HILL. The Santa Ana River Flood Control Authority is represented here by Andrew Schlange and Doyle Boen. That statement has been submitted.

Also, Tom McAliester, assistant to the general manager of Rancho California Water District has submitted his statement in the interest of time.

And statements supporting the delta support studies, delta water management program, and off-stream storage statement have been filed by John DeVito, executive director, Contra Costa Water District.

[The statements follow:]

Letter From J. Andrew Schlange, Manager, Santa Ana Watershed Project Authority

March 19, 1987

Honorable J. Bennett Johnston, Chairman
Committee on Appropriations,
Sub-Committee on Energy and Water Development
United States Senate
Washington, D.C. 20515

Attention: Mr. Proctor Jones, Staff Assistant

The Santa Ana Watershed Project Authority (SAWPA) filed for a loan under P.L. 84-984 (Small Reclamation Projects Act of 1956, as amended) and prepared a Project Report (Loan Application) which was approved by the Secretary of Interior and transmitted to Congress on October 3, 1983 as an approved project now fully eligible for Federal funding. Contracts with the USBR were executed on February 11, 1985. Total project cost is $18,728.000.

Federal funding in the amount of $12,542,000 has been approved to date. As recommended in the President's budget for Fiscal Year 1988, we are respectfully requesting that your committee provide for the final funding of the project, in the amount of $2,172,000.

In addition, we will be requesting our Congressional Delegation to request a line item in the USBR budget for fiscal year 1987/88 of $150,000 for Ground Water Studies in the San Bernardino County area. SAWPA is prepared to match this funding request on a dollar for dollar basis.

I plan to be in Washington D.C. March 27, thru April 2, 1987 when your Committee will be holding hearings on the appropriation bill, and I respectfully request the opportunity to appear before your Committee in support of these two projects. I am enclosing a summary of the SAWPA Project and Study which I will describe very briefly as a part of my testimony at the hearing.

I sincerely appreciate your assistance in scheduling the opportunity for me to appear before your Committee to testify on behalf of the SAWPA Project.

Respectfully,

J. Andrew Schlange
General Manager
SANTA ANA WATERSHED PROJECT AUTHORITY

JAS/yjm
Enclosure

STATEMENT OF J. ANDREW SCHLANGE, MANAGER, SANTA ANA WATERSHED PROJECT AUTHORITY

Mr. Chairman, my name is Andrew Schlange, General Manager of the Santa Ana Watershed Project Authority (SAWPA). I appreciate the opportunity to submit our agency's request for funding of a construction project under the authority of the Small Reclamation Project Act and a study under the general investigation program of the Bureau of Reclamation.

Woodcrest Project

SAWPA respectfully requests continued appropriations in the amount of $2,172,000 as outlined in the President's 1987/88 Bureau of Reclamation budget for construction of an Imported Water Conveyance System to serve water customers in a portion of Riverside County, California. As stated in previous testimony, this project is necessary to compensate for the reduction in water supplied to this area from the Colorado River. Reductions could result as an impact of the Central Arizona Project. The new system being constructed will provide water from another source to supply established uses, the majority of which is agricultural.

The project consists of 85,000 feet of water line, a pump station and a 10-million gallon reservoir. Funds made available in previous budgets, have allowed project design and partial construction to begin. Right-of-way acquisition is now under way, using local funds. The Loan Application Report was approved by the Secretary of the Interior on October 3, 1987 and contracts were executed with the USBR on February 11, 1985. To date, SAWPA has contracted for approximately $8,000,000 of work including material purchase and construction contracts on the contract. SAWPA expects to enter additional contracts in the amount of $ 3-4 million dollars before the close of the 1987 fiscal year.

No grant funds are being requested. All Federal funding will be repaid. The following summarizes the project funding:

Total Project Cost	$18,728,000
Loan (30-year repayment)	$14,917,000
Local Contribution	$ 3,811,000
Rights-of-way	($ 100,000)
Loan Application	($ 175,000)
CEQA-EIR	($ 25,000)
Filing Fee	($ 1,000)
Local Administration of loan	($ 10,000)
Proposed Pump Station	($ 1,226,000)
Cash	($ 2,274,000)

A more complete description of the project is attached as Exhibit A.

San Bernardino Groundwater Investigation

SAWPA is also in negotiations with the Bureau of Reclamation for sponsorship of the proposed San Bernardino Groundwater Investigation. This imported study could lead to a unified water management concept which could result in significant water conservation. The Santa Ana Watershed is currently losing thousands of acre-feet of water to the Ocean while at the same time importing supplemental water at a cost of $200 per acre foot. This investigation could put in place the framework for reducing the need for supplemental water by full use of local supplies. The fiscal year 1987 budget includes funding for this study as part of

the Bureau of Reclamations general investigations program. We respectfully request continued appropriations of $150,000 to match local funding of the same amount in fiscal year 1988.

A summary of the summary is enclosed as Exhibit B.

Exhibit A

PROPOSED IMPORTED WATER CONVEYANCE SYSTEM

PROJECT SUMMARY

LOCATION

The Santa Ana Watershed Project Authority (SAWPA) is located within the boundary of the Santa Ana Watershed and includes portions of Orange County, Riverside and San Bernardino County, approximately 55 air miles east of the City of Los Angeles, California.

ORGANIZATION

SAWPA was legally organized in 1973 under the laws of the State of California. SAWPA was created under a joint powers agreement between Western Municipal Water District, Chino Basin Municipal Water District, San Bernardino Valley Municipal Water District and Orange County Water District. In 1984, Eastern Municipal Water District joined the agency. SAWPA was created by these districts to act on their behalf in such matters as planning, constructing, operating and maintaining irrigation, water quality improvement and other projects financed privately or through loans or grants. The agency has authority to execute a contract with the Unites States for repayment of the loan, has the power of eminent domain and has authority to raise funds through assessments ments to member agencies as necessary for repayment of the loan.

PLAN

Western Municipal Water District of Riverside County, California, one of the five member agencies of SAWPA, currently relies on imported Colorado River Water supplied by the Metropolitan Water District of Southern California (MWD) as its sole source of supply. MWD currently has a contract entitlement of 2,011,500 acre feet per year of State Project Water and 1,212,000 acre feet per year of Colorado River Water.

Completion of the Central Arizona Project and Arizona use of its Colorado River Rights will cause MWD's Colorado River Water Entitlement to be reduced to 550,000 acre feet per year, a reduction of 55 percent compared to the current entitlement.

The SAWPA project will protect the existing agricultural economy in this portion of Western Municipal Water District by providing conveyance facilities to transport State Project Water from MWD's Box Spring Feeder to agricultural users in lieu of the diminished Colorado River Water. The higher quality State Project water would provide additional benefit by decreasing the amount of applied water necessary to optimise crop yields.

PHYSICAL WORKS

The principle project features are shown on Figure 1 and include:

1. Gravity pipeline beginning at the upstream side of the Mills Filtration Plant and running westerly approximately 65,000 feet. This pipeline would start as a 60-inch diameter line with a capacity of 150 cfs.

2. **Ten million gallon storage reservoir located near the westerly end of the gravity pipeline. The reservoir would provide storage equal to approximately one-half the ultimate maximum day demand for balancing diurnal flow variations and as protection again emergency outage of the Box Springs Feeder.**

3. Pressure pipeline beginning at the downstream side of the Mills Filtration Plant and running southerly approximately 18,300 feet. This pipeline would start as a 42-inch diameter line with an ultimate capacity of 41.7 cfs. An additional 12.2 cfs will be transported by existing pipelines in the area. The pipeline would connect to an existing distribution system which currently conveys treated Colorado River Water from a southerly supply point.

4. Pumping station expanaion at the site of the Mills Filtration Plant, supplying water to the pressure pipeline. The added facilities would be capable of pumping 33.3 cfs at a total dynamic head of 170 to 220 feet, to increase total plant capacity to 53.9 cfs.

EXHIBIT B

SAN BERNARDINO GROUNDWATER INVESTIGATION

BACKGROUND

The Santa Ana River watershed comprises approximately 2,200 square miles in portions of San Bernardino, Riverside, Los Angeles and Orange Counties. It contains a population of about 3.5 million persons and is one of the fastest growing areas of the United States. Copious supplies of groundwater facilitated extensive agricultural development and urban growth. In recent decades, however, local water supplies were not sufficient to keep up with demand, and now water is being imported into the area to supplement local supply. In the future, import water is expected to cost up to $300 per acre foot. Consequently, making optimum use of the basin's local supply is imperative.

A key element of the basin's water supply is the Groundwater basin under the San Bernardino Valley, both because of the amount of water it provides for overlying agricultural and municipal purposes, and because of its potential to capture and hold spring runoff if storage capacity is available there.

The Santa Ana Watershed Project Authority was established to provide oversight of the water supply and quality of the entire basin. It functions as a cooperative union of five member agencies who together cover the entire basin, namely:

San Bernardino Valley Municipal Water District
Western Municipal Water District
Orange County Water District
Chino Basin Municipal Water District
Eastern Municipal Water District

Recognizing that the management of the local water resources in the basin are not at an optimum and that improved management could yield more of this costly commodity than at present, SAWPA has requested that Reclamation conduct a planning study which would develop an operating plan that facilitates more efficient use of the local resource.

Numerous other water agencies and flood control agencies in the basin are responsible for management of various portions or aspects of the basin water resource, and are thus also vitally interested in the prospects for improved management.

OBJECTIVES OF STUDY

The objective of the study is to develop a program for the long-range management of the San Bernardino Valley Groundwater Basin and the upper Santa Ana River Watershed, in which it lies, to achieve the greatest practical yield of water occurring locally in the watershed. In order to do this, coordinating groundwater recharge is necessary, using local and imported water with extraction of water for use in a flexible plan that can cope with years of high runoff and low runoff and reasonably meet all the demands put on the groundwater basin. In other words, a plan should balance out the local water supply from wet and dry periods, which tend to occur in erratic cycles.

Based on past and present water supply conditions in the basin, this objective is anticipated to involve the construction of physical facilities to extract water from the San Bernardino Basin and convey it elsewhere for direct use or for storage.

The ultimate product of this process would be a planning report which would, after public review, be submitted to Congress for authorization of Federal funding for works that need to be constructed. Integrated into this report would be sufficient documentation to satisfy the reporting requirements of the National Environmental Policy Act. Perhaps even more importantly, the report would contain a plan of operation for the basin that would have the concurrence of involved water interests.

PROBLEMS TO BE ADDRESSED BY THE STUDY

The following problems will be addressed, individually or in combination, as part of the plan formulation process.

1. The watershed sporadically looses large quantities of water to the ocean during periods of high runoff.

2. High water table in the San Bernardino area is causing damage to public and private buildings and aggravates the risk of seismic disturbance in the event of an earthquake.

3. A technical "overdraft" situation exists in the San Bernardino Groundwater Basin despite a surplus of water in the lower-elevation portion of the basin. This stems from institutional constraint, on remedies.

4. The groundwater basin the Yucaipa area is overdrafted.

5. The Chino Basin has unused storage capacity for water, and is at the same time loosing water from its lower-elevation areas.

6. Institutional barriers prevent exchanges of water which would provide fuller utilization of the local supply.

7. Groundwater pollution is occurring in certain areas of the basin and is degrading water quality, preventing its use for municipal purposes and degrading water quality in the lower part of the basin.

8. The basin is not self sufficient in water supply, but relies on supplement import water. The import water supply may be insufficient to meet short term needs during critical shortage periods.

STUDY PHASES

This planning study will involve three successive phases. Generally, each phase will involve narrowing the range of alternatives under consideration, and increasing degrees of detail.

The first phase of the study will be to make a preliminary evaluation of the project to determine whether a viable solution exists. This evaluation will involve scoping the range of alternatives to be considered, a preliminary shakeout of alternatives to determine likely candidates, and the evaluation of one or two of the best to demonstrate that a viable solution exists. At the end of this phase, and Internal Preliminary Findings Memorandum will be prepared to present the results of this phase and recommendations on proceeding with more detailed study. A detailed plan of work for the remainder of the study will also be prepared, building upon the experience gained in the preliminary phase.

The second phase will involve the formulation and evaluation of definite project alternatives, using the preliminary alternatives as a starting point. A preferred alternative will be further refined and ultimately submitted to Congress for consideration of construction authorization.

Toward the end of this phase, when the alternatives have been formulated and evaluated and a preferred project plan has emerged, a Plan Formulation Working Document will be prepared to document the process alternative.

Based on the environmental analysis to this point, and a public scoping meeting, a decision will be made during this phase as to whether an Environmental Statement is needed for the project, or whether a simpler environmental assessment will suffice.

The third phase will involve refinement of the preferred alternative to add all the details needed to make it complete and fully capable of implementation. During this phase the planning report and integrated environmental document will be prepared for official public distribution.

STUDY ACTIVITIES

The following are the major activities to be performed during this study.

Review of Existing Studies. The various planning studies that have been prepared in connection with the basin will be evaluated and desireable features will be used to prepare a preliminary array of alternatives.

Water Supply and Demand Projections. Projections of future water demand and supply in the basin need to be prepared and evaluated.

Groundwater Basin Analysis. The San Bernardino Groundwater Basin will be analyzed by means of available digital models. The various operating scenarios developed in conjunction with the various project alternatives would be analyzed both to help formulate the alternatives and to analyze their benefits. The groundwater management and use practices of numerous local water districts would need to be accounted for.

Santa Ana River Basin Analysis. The river basin will be analyzed using available digital model, and this operation coordinated with the analysis of the groundwater basin analysis.

Water Rights Compilation. Water rights, adjudications, and other agreements will be catalogued and abstracted in terms that permit their scrutiny in connection with the development and analysis of alternative management plans.

Water System Design and Costing. Water system features to move water from areas of high groundwater to other areas will be located and planning designs and cost estimates made.

Benefit Studies. The monetary benefits of the project will be estimated to determine the feasibility of the project.

Financial Analysis. A financial plan will be developed to show the amount of repayment required, and how funds for repayment would be generated locally.

Environmental Studies. Studies to determine the environmental impacts of the project will be completed. At present, the nature and scope of these potential impacts are not known. They will probably include some minor affects on wetlands, and the usual construction impacts. The U.S. Fish and Wildlife Service will be asked to evaluate the effects the project will have on Wildlife habitat, and to provide recommendations during plan formulation.

Social Analysis. This will determine the social impacts and effects that need to be considered in decision making and plan selection.

The planning process is an alternative process in which alternatives are formulated and first subjected to a preliminary analysis, then refined and subjected to a more detailed analysis. Anywhere in the process changes may occur from suggestions or inconsistencies and generate additional alternatives to examine. In this framework, the activities cited above are done in increasing levels of detail as project plans gradually become more complete and refined.

GENERAL PRINCIPLES AND GUIDELINES

This will consist of formulating several meaningful alternative management plans and necessary project features. First, a plan or plans would be formulated to best use available water resources and serve local needs without regard to institutional constraints. Then institutional constraints would be overlaid to identify constraints that might be relaxed or changed to permit best use of local water resources. Finally, after a review of the results, several alternatives will be selected for evaluation and analysis.

General criteria for formulating alternatives are that:

> Water originating in the basin be used in the basin.
> Equity be achieved among basin water users.
> The plan must meet the tests of completeness, effectiveness, efficiency, and acceptability, as defined in Federal Principles and Guidelines for Planning Water Resources Projects.

This planning study and the formulation of a locally supported plan cannot be accomplished by Reclamation or any other agency alone. Reclamation will rely on a high degree of interaction and cooperation with local interests. At key times, personnel from SAWPA and its member agencies will work alongside Reclamation planners in the formulation and evaluation of alternatives.

In accord with Federal guidelines for planning, the public will be kept informed of study activities and comments and input on various issues will be sought for the study. A public meeting will need to be conducted to scope the environmental issues to be dealt with in the study, in order to comply with NEPA.

BUDGET

In-Kind Services

The local contribution to this study will consist partly of in-kind services performed or procured by SAWPA, its constituent agencies, or other local entities. Such in-kind services will include, but not be limited to, the following:

Compiling and abstracting water rights and related local legal issues,

Adaptations existing water supply operation models for use in this study, and providing them for use in the study,

Providing the services of various technical people from the staffs of local water agencies to work closely with Reclamation during various phases of the study,

Providing the services of outside experts in various phases of water management for participation with Reclamation planning activities as needed to assure a quality product,

Analyzing water quality aspects of project alternatives,

Making local arrangements for public meetings, and

Printing various public information and technical documents for use during the study.

STATEMENT OF CONTRA COSTA WATER DISTRICT, CALIFORNIA

SACRAMENTO - SAN JOAQUIN DELTA/BAY WATER QUALITY

Honorable Chairman and Committee members, my name is John E. DeVito, Executive Director of the Contra Costa Water District, a public agency of the State of California.

For forty-seven years, Contra Costa Water District by way of repayment contracts with the U.S. Bureau of Reclamation, has been responsible for the water supply for some 300,000 people, 23 industries that employ over 16,000 employees, and 150 small farms, through the Contra Costa Canal System, the first unit of the Federal Central Valley Project. The District also diverts water from the Delta under a vested water right dating back to 1930's prior to the CVP. We depend solely and totally on the Sacramento - San Joaquin Delta for our water supply.

Due to the USBR's over-commitment of the CVP water supply and build-ups in exports from the Delta, we will experience re-occurring increased salt water intrusion in the Delta, to a level that is adverse to public health, causes loss of certain industrial products, adds severe penalty treatment costs to all industry, and causes damage to irrigated plants. (Note attachments.)

These adverse effects on public health, industry and agriculture occurred during 1959 - 1960 - 1961, due to USBR operations, and occurred again during the 1976 - 1977 drought, due to the obvious over-commitment of the CVP. For 161 days in 1959 and 143 days in 1961, due to USBR export pumping caused salt water intrusion, the Water District distributed notices to the County Health Department, doctors, hospitals, and the press warning of high sodium levels in the water supply. USBR statements indicate that these poor water quality levels will occur in the future during normal years.

Accordingly, Contra Costa Water District respectfully requests the support for the conditions necessary to protect the beneficial uses in the Sacramento-San Joaquin Delta, San Francisco Bay and Suisun Marsh, with particular attention to:

No. 61A-B-C — Delta Support Studies Including Suisun Marsh

Bureau of Reclamation and Department of Water Resources agree that operation of the Federal Central Valley and State Water Projects have adverse effects on municipal, industrial and agricultural users as well as on fish and wildlife in the Sacramento-San Joaquin Delta and San Francisco Bay Estuary. State Water Resources Control Board's Decision 1485 requires environmental studies be continued for use in future State water rights hearings. Contra Costa Water District urges full fundings for these studies including efforts in the Bay and the Federal share of the Suisun Marsh water quality facilities.

No. 79 — Kellogg Unit-Central Valley Project Contra Costa

Consistent with the federal cost-sharing policy, Contra Costa Water District has urged the USBR Regional Director, Mid-Pacific Region, to develop a plan of study for Kellogg Reformulation that provides for in-kind contributions at Water District expense, and to the extent District contributions meet the requirements of federal law, regulations and policy, should be credited to project costs.

Contra Costa Water District supports reprogramming an additional $79,000.00 which would allow the USBR to complete the feasibility investigation for the Kellogg Unit Reformulation and the relocation of the Contra Costa Canal Intake.

No. 79A Off Stream Storage

Contra Costa Water District supports funding of feasibility investigations for the Los Vaqueros Reservoir and the Los Banos Grande Reservoir.

Under provisions of PL 99-546 and the Coordinated Operations Agreement, the U.S. Bureau of Reclamation now has a legal obligation to share with the California Department of Water Resources the responsibility of meeting Bay-Delta water quality standards. Offstream storage provides a real option for the USBR to satisfy this legal obligation.

Los Vaqueros could also be used to provide an urgently needed standby or emergency water supply along with water quality benefits for other Bay Area water agencies such as East Contra Costa Irrigation District, Santa Clara Valley Water District, Alameda County Water District, Alameda County Flood Control and Water Conservation District Zone 7, East Bay Municipal Utility District, City of San Francisco, etc.

In order to halt subdivision approvals and minimize cost of lands required by the proposed Los Vaqueros/Kellogg Project, Contra Costa Water District is purchasing the entire reservoir water shed of approximately 20,000 acres.

Contra Costa Water District is also proceeding with feasibility studies of the local non federal share of the Los Vaqueros/Kellogg Reservoir Project.

No. 80A **Delta Water Management Program**

Consistent with the USBR obligations under PL 99-546 and the Coordinated Operations Agreement, Contra Costa Water District supports reprogramming an additional $555,000.00 to allow the USBR to fulfill its responsibility towards developing a program that would correct or at least minimize Delta water quality problems caused by water transfers.

No. 84 **Environmental and Interagency Coordinations Activities, Mid-Pacific Region**

Contra Costa Water District supports the reprogramming an additional $625,000.00 so that the USBR can continue with its multi-agency responsibility as envisioned in the Coordinated Operations Agreement.

In order to implement the Congressional mandates of PL 99-546 and the Coordinated Operations Agreement, we respectfully urge your support for Contra Costa Water District and the California Water Commission's FY 87-88 recommendation for reprogramming additional funds for California Water Resources activities.

We believe that funding to implement the intent of PL 99-546 will maximize local and State project financing and minimize the need for federal appropriations.

Please accept our appreciation for this opportunity to appear, and may this statement be made part of the record.

STATEMENT OF RANCHO CALIFORNIA WATER DISTRICT

THE DISTRICT

Rancho California Water District (RCWD) is a large District located in the southern most portion of Riverside County, adjacent, in part, with the San Diego County line. The District is comprised of some 100,000 acres or 150 square miles. All of the San Diego aqueducts pass through the center of the District from the Skinner Reservoir and Filtration Plant just north of the District. RCWD owns and operates Vail Dam with a storage capacity of approximately 50,000 acre feet (larger than Skinner). RCWD also overlies the only large high quality groundwater basin south of Chino. The groundwater basin is made of up a complex system of water-bearing materials (aquifers) ranging from the surface area's zero (0) to two hundred fifty-feet (250) below ground surface (younger alluvium). With extremely high recharge rates to deep, older sediments (Temecula Arcose) containing large amounts of high quality usable water. The total estimate in storage within 1,000-feet of ground surface is approximately 2,400,000 acre feet.

THE PROJECT

The project consists of 21.8 miles of pipelines (to date 13.5 miles have been constructed) and facilities to use imported water to recharge the younger alluvium without taking capacity off the San Diego Aqueduct. This will allow up to 100,000 acre feet to be placed in storage and will benefit the entire region, the project will enable the District to deliver stored water to points of beneficial use and will allow the capture of flood flows which would otherwise be lost to the Pacific Ocean. The project will preserve 16,793 acres of valuable permanent agricultural crops.

In addition to the recharge facilities, some 38 wells are included to recover the stored water and to extract water from the deeper zones. Twenty (20) of the wells have been constructed.

The immediate objective of the project is to provide facilities for RCWD to become more independent of the imported water facilities and to more effectively manage the tremendous storage capacity and production capability of its basin. The total project cost is slightly over $24,000,000 of which RCWD will contribute more than $3,000,000 (up-front money), the remaining $20,311,000 is being financed by a loan under the Bureau of Reclamation PL 84-94 Small Project Loan Program. This loan will be repaid with applicable interest over a period of approximately 20 years.

The Bureau of Reclamation has transferred $5,384,000 of currently available funds in fiscal year 1987 to the RCWD project in Riverside County. The additional funds will allow the District to continue construction as proposed and supported by the approved work schedule.

The requirement of $5,384,000 in fiscal year 1987 for the above project can be met from Eastern Municipal Water District in the amount of $1,984,000 and from Rainbow Municipal Water District in the amount of $3,400,000. The funds are surplus to Eastern Municipal Water District needs in fiscal year 1987 due to the delay in preparation of the final escalation loan application report by that district and the execution and validation of the mandatory repayment contract. Funds are surplus to Rainbow Muncipal Water District needs in fiscal year 1987 due to delay in construction progress.

RCWD has complete support of the California Water Commission for its project, and would very much appreciate your support of the appropriation requests in the President's fiscal year 87-88 budget.

SAN JOAQUIN VALLEY CONVEYANCE AND OFF-STREAM STORAGE STUDIES, CALIFORNIA

STATEMENT OF GEORGE D. McKEAN, CHAIRMAN, MID-VALLEY WATER AUTHORITY

ACCOMPANIED BY:

RICHARD SCHAFER, CHAIRMAN, NEGOTIATING SUBCOMMITTEE
JEFF TAYLOR, SECRETARY/TREASURER

Mr. HILL. Our next one is the San Joaquin Valley conveyance study and off-stream storage, George McKean, chairman of Mid-Valley Water Authority.

Senator COCHRAN. Mr. McKean.

Mr. McKEAN. Mr. Chairman, and Senator Wilson, my name is George D. McKean. I am the chairman of the board of directors for the Mid-Valley Water Authority.

With me today are Richard Schafer and Jeff Taylor, who has done most of the work in this report.

My written statement has been submitted, and in order to save this subcommittee's time, I ask it be included as part of the hearing record.

We request that the subcommittee allocate $450,000 for the San Joaquin Valley conveyance investigation and $363,000 for the off-stream storage studies to continue the orderly development of the Mid-Valley Canal project.

Thank you for the privilege of appearing before this committee.

[The statement follows:]

STATEMENT OF GEORGE D. MCKEAN, CHAIRMAN OF THE BOARD OF DIRECTORS, MID-VALLEY WATER AUTHORITY, CALIF.

My name is George D. McKean and I am Chairman of the Board of Directors of the Mid-Valley Water Authority. The Authority urges the Subcommittee to continue the funding of Bureau of Reclamation planning studies identified in prior budgets as the San Joaquin Valley Conveyance Investigation and Off-Stream Storage studies. Both studies have been funded for several years and are nearing completion, but were not allocated funds in the President's 1988 budget. We request under line item: San Joaquin Valley Conveyance Investigation, $450,000 and under line item: Off-Stream Storage Studies, $363,000. Without these funds, we will not be able to continue the orderly development of the Mid-Valley Canal Project.

SUMMARY

The Mid-Valley Water Authority (MVWA), a Joint Exercise of Powers Agency, consisting of 29 public agencies in six counties of the San Joaquin Valley, California, was formed December 3, 1982. The service area of the MVWA covers approximately 3.4 million acres of irrigated agriculture, and the projected long term groundwater overdraft approaches 1.5 million acre-feet per year.

The Bureau of Reclamation has identified unallocated firm Central Valley Project (CVP) water as a result of the Coordinated Operations Agreement with the State Department of Water Resources (DWR), operations of the Trinity River, interim CVP water (available from non-use of allocations under existing contracts) and additional intermittent CVP water supply, the total of which exceeds 1 million acre-feet per year. A portion of such water supplies are subject to contractual negotiations with the MVWA upon the removal of the moritorium, as imposed by former Secretary of Interior Andrus, on further contracts for delivery of water from the Delta.

The President's Budget for fiscal year 1987-88 did not allocate funds for the continuation of the planning studies for the determination of the most economical routing of the Mid-Valley Canal for delivery of additional supplemental water supplies for correction of the groundwater overdraft within the MVWA service area and for the determination of the most feasible Off-Stream storage reservoir sites for conservation and storage of surplus and floodwaters south of the Delta and on the east side of the San Joaquin Valley.

The Mid-Valley Canal Project authorizing legislation, HR572 and S608, have been introduced in the Congress. Should the Congress fail to authorize the project this session there would be no funds available during fiscal year 1988. Therefore, the Authority urges the Subcommittee to allocate $450,000 for the San Joaquin Valley Conveyance Investigation and $363,000 for the Off-Stream Storage planning studies to continue the orderly development of the Mid-Valley Canal Project.

ORGANIZATION

The Mid-Valley Water Authority was organized under the Joint Exercise of Powers Act, Articles I and II of Chapter 5 of Division 7, Title 1 of the Government Code of the State of California (Section 6500 et seq.) on December 3, 1982. The public districts, which are members of the MVWA and their percentage of participation therein, are set forth in Table 1. Each of the 29 public agencies is represented by a director and alternate on the Board of Directors and on an Advisory Committee. The MVWA was organized as an institutional device for the continuation and coordination of the various efforts that have been independently pursued by the member agencies to secure a supplemental water supply and the construction of a conveyance facility for the delivery of the supplemental water supply to the MVWA service area.

SERVICE AREA

The MVWA includes a service area of approximately 3.4 million acres of irrigated agricultural lands. The boundary of the MVWA extends from the Merced County line on the north to the southerly boundary of the Arvin-Edison Water Storage District on the south, and generally from the Sierra foothills to the trough of the San Joaquin Valley.

Lands within the Counties of Madera, Merced, Fresno, Kings, Tulare and Kern are of membership in the MVWA. A map of the MVWA service area is included as Plate 1.

HISTORY

The lands included within the Mid-Valley Water Authority are, for the most part, lands which are presently under cultivation and indeed, these areas were some of the earliest extensively irrigated lands in the State.[1] While the service area of the Mid-Valley Water Authority was included within the planning for the integrated operation of the Central Valley Project, the construction of a delivery facility (Mid-Valley Canal) has not been accomplished. Studies for the development of the East Side Division of the Central Valley Project proceeded through the late 1950's and early 1960's and a proposed feasibility report for the East Side Division, Initial Phase, was sent to the Secretary of the Interior in 1968.[2] As the overall imbalance between the available water supplies and the consumptive demands became more and more apparent, the member agencies independently persisted in their efforts to urge the federal and state governments to proceed with the development of a delivery capability for the Central Valley Project waters that were and are available in the Delta to the area now included within the Mid-Valley Water Authority. As a result of these efforts, the State Department of Water Resources and the U.S. Bureau of Reclamation jointly studied the construction of a Mid-Valley Canal which would incorporate features of the State Water Project and the Delta Mendota Canal of the CVP. Those studies culminated in the publication of a report entitled "Mid-Valley Canal, East Side Division, Central Valley Project, California, 'A report on the Mid-Valley Canal Feasibility Investigation' U.S. Department of the Interior". (January, 1981). The Report contained an extensive consideration of the needs within the proposed service area and the hydrologic, environmental and economic considerations of constructing the proposed facility as a federal facility. In conjunction with that report, tentative allocations of the available CVP water supply were made among the various agencies that were seeking to participate, those allocations being predicted upon criteria developed by the Bureau of Reclamation.

When the study for the Mid-Valley Canal was commenced, the Bureau of Reclamation had identified a firm annual water supply in the Delta of approximately 500,000 acre-feet as available for export to the proposed service area. Before the report could be completed, the Bureau of Reclamation revised its estimations of the marketable CVP yield in light of Delta water quality considerations.[3] In view of these revised yield calculations, the report proposed that there be no federal action for Congressional authorization of the Mid-Valley Canal until a firm water supply is available. The report does conclude, however, that the Mid-Valley Canal service area should be considered as an area to utilize any additional yield originating from existing CVP facilities.

While the Mid-Valley Canal that was the subject of the aforesaid feasibility investigation has not been authorized for construction, the residents and public agencies within its projected service area have proceeded with the formation of the Mid-Valley Water Authority to promote its purposes. The geographic configuration of this authority as well as the participation percentages of the various member agencies were developed in substantial reliance upon the service area and allocation criteria used by the Bureau of Reclamation in its feasibility study. The Authority was organized to continue the search for a reliable water supply for the east side of the San Joaquin Valley.

The lands included within the Mid-Valley Water Authority are among the most severely overdrafted agricultural lands in the State. The Mid-Valley Canal feasibility investigation identified projected 1.5 million acre-feet annual groundwater overdraft.

The California State Department of Water Resources in Bulletin 118-80, identified eight basins as being subject to critical conditions of overdraft in the San Joaquin hydrologic study area. Seven of those basins, the Chowchilla, Madera, Kings, Kaweah, Tulare Lake, Tule and Kern County basins essentially make up the service area of the present Mid-Valley Water Authority. Those basins were identified by DWR as having a long-term annual overdraft of 1,339,000 acre-feet.

In identifying the needs within the Mid-Valley Canal service area, the U.S. Bureau of Reclamation concluded that the local surface supplies have been almost completely utilized and cannot realistically meet the demand. In addition, the report notes that overall basin irrigation efficiency is very high and conservation gains would likewise be of no consequence toward correcting the overdraft. The Mid-Valley feasibility report concluded in pertinent part as follows:

> "A replacement water supply for the Mid-Valley Canal general service area is urgently needed. The present annual groundwater overdraft of over 1 million acre-feet forecasts the abandonment of over 440,000 acres of highly productive irrigated agricultural lands within the foreseeable future unless a replacement supply can be imported."

The Coordinated Operations Agreement (COA) recently executed by the U.S. Bureau of Reclamation and the California State Department of Water Resources identified a remaining CVP firm yield in the amount of 1.1 million acre-feet per year. In addition to the uncommitted firm yield, the Bureau has identified 500,000 acre-feet of 80 percent dependable supply, other intermittent supply (CVP yield available some years above the firm and dependable supply) and an interim supply of 800,000 acre-feet (firm yield under contract not being used).

The MVWA is further supporting the construction of the Auburn Dam project, and intends to become a cost sharing participant and a recipient of a portion of the project yield.

Thus, with an appropriate conveyance facility, the MVWA would be capable of importing nearly 1-million acre-feet of additional supplemental water supply to the MVWA service area.

PURPOSE

The Bureau of Reclamation and the MVWA entered into a "Letter of Intent for the Funding and Conduct of Studies to Resolve Groundwater Overdraft and Meet the Water Needs in the San Joaquin Valley" and an "Agreement Between the United States of America and Mid-Valley Water Authority Providing for the Funding of Certain Studies Pertinent to the Provision of Supplemental Water Supplies for the San Joaquin Valley" in November 1983 for determining the most feasible method of importing additional surface water supplies needed to offset the groundwater overdraft within the MVWA service area. The MVWA is cost-sharing the studies by contributing funds and by providing in-kind services. The Bureau, State, DWR and the MVWA initially jointly studied the capability of all existing facilities for delivery of additional CVP water within the MVWA service area and currently are concluding the feasibility study and environmental assessment that will identify the selected project alternative routing for the Mid-Valley Canal.

The San Joaquin Valley Conveyance Study will further evaluate necessary pumping plants, canal structures, consider the integration of off-stream water conservation storage reservoirs, and evaluate other facilities needed for delivery of supplemental water to resolve the groundwater overdraft and related problems in the service area, including drainage, erosion and sedimentation, flooding and fish and wildlife deterioration.

The authorizing legislation for the Mid-Valley Canal has been introduced in the House as HR572 (Lehman, Coelho, Thomas and Pashayan) and in the Senate as S608 (Cranston and Wilson). The bills are identical and the Authority is urging the Congress to favorably act on the legislation during this session. However, should the Congress fail to authorize and include an appropriation for the Mid-Valley Canal Project this session, the orderly development of the project would be seriously impaired. Therefore, the Authority urges the Subcommittee to allocate $450,000 for the San Joaquin Valley Conveyance Investigation and $363,000 for the Off-Stream Storage line items to allow the continuation of planning studies and preliminary design of the selected project alternatives of the on-going feasibility studies that will be completed next fiscal year.

I appreciate the privilege of appearing before the Committee and respectively urge your support and ask that my statement be made a part of the hearing record.

[1] Central Valley Project Documents Part 1, Authorizing Documents, 84th Congress 2nd Session House Document #416 (1956) Intro. pp 1-16.

[2] East Side Division, Initial Phase, Central Valley Project California "A Report on the Feasibility of Water Supply Development". U.S. Department of the Interior, Bureau of Reclamation (December 1965 Rev. June 1966).

[3] Mid-Valley Canal Feasibility Study, p. 66.

TABLE 1

MEMBERSHIP COMPOSITION OF MID VALLEY WATER AUTHORITY

Member Agency	Participation %
Alpaugh Irrigation District	1.44
Alta Irrigation District	1.84
Atwell Island Water District	1.23
Chowchilla Water District	0.62
City of Corcoran	0.62
Clayton Water District	0.62
Consolidated Irrigation District	3.27
County of Fresno	7.15
Fresno Irrigation District	2.05
Gravelly Ford Water District	0.52
City of Hanford	1.44
James Irrigation District	0.92
Kaweah Delta Water Conservation District	7.15
Kern County Water Agency	7.15
County of Kings	4.09
Kings County Water District	7.15
Kings River Conservation District	7.15
Labranza Water District	1.23
Lakeside Irrigation Water District	1.84
Liberty Water District	1.23
Lower Tule River Irrigation District	4.09
Madera County Flood Control & Water Conservation Agency	7.15
Madera Irrigation District	3.27
Pixley Irrigation District	7.15
Raisin City Water District	7.15
Saucelito Irrigation District	1.44
Sierra Water District	2.25
County of Tulare	7.15
Tulare Irrigation District	1.64
	100.00

RED BANK AND FANCHER CREEKS, CALIF.

STATEMENT OF JIM MARKARIAN, CHAIRMAN, BOARD OF DIRECTORS, FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

Mr. HILL. Our next speaker is Mr. Jim Markarian, chairman of the board of directors, Fresno Metropolitan Flood Control District.

Mr. MARKARIAN. Mr. Chairman and Senator Wilson, as well as the president of the Metropolitan Flood Control District, I am authorized to speak for the Fresno Irrigation District, County of Fresno, and the cities of Fresno and Clovis.

We appreciate the committee's continuing support of the Redbank-Fancher Creeks flood control project, and request the appropriation of $1.9 million allocated in the President's budget. The requested funds are necessary for the continued construction, which began the fiscal year 1987.

I thank the committee, and the rest of our comments are in our report that has been filed.

Senator COCHRAN. Thanks very much.

[The statement follows:]

STATEMENT OF JIM MARKARIAN, CHAIRMAN, BOARD OF DIRECTORS, FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

My name is Jim Markarian and I am Chairman of the Board of Directors of the Fresno Metropolitan Flood Control District of Fresno County, California, the local sponsor for the Redbank-Fancher Creeks Flood Control Project, a modification to the previously authorized Fresno County Streams, California project. I am authorized to speak on behalf of the County of Fresno, the Cities of Fresno and Clovis, and the Fresno Irrigation District. In addition, the California legislature has passed and the Governor has signed legislation approving the project and authorizing State financial participation.

We respectfully request that continuing project construction be retained in the FY 87-88 budget in an amount not less than the $1,900,000 provided in the President's budget. The subject construction element will provide immediate flood protection to the Friant-Kern Canal of the important Central Valley Project.

The Redbank-Fancher Creeks Project was initially identified in the Big Dry Creek project investigation of 1940 and the resulting Fresno County Streams project authorization. In 1956, the Congress specifically authorized investigation of the project modification relating to the Redbank, Fancher, and Big Dry Creeks stream system. Unfortunately, federal funds were not appropriated until the disasterous 1969 floods. The completed investigation proves the project to be both economically justified and environmentally sound.

The Redbank-Fancher Creeks Project is economically justified on the basis of flood damage prevention alone. Though other benefits accrue, they are not required to produce a positive benefit/cost ratio. The project will provide protection to 51,000 acres containing a population in excess of 120,000. The final benefit/cost ratio is estimated at 1.6:1 at an 8-5/8% interest rate, including CPE costs.

Estimated average annual flood damages exceed $14,000,000 and affect both urban and agricultural land. The project will also protect an open irrigation canal system which transverses 210,000 acres of the world's most productive agricultural lands, Fresno County's gross annual production recently exceeding 2.0 billion dollars. The project will control the historic flooding which has seen the stream and canal systems overflow an average of once every four years since 1953.

In July 1980, the investigation report was forwarded to the Chief of the Corps of Engineers being subsequently forwarded to the Congress as House Document 98-147. The project has since been authorized for construction through PL 99-662 and completion of the LCA is being pursued with the Corps. The project is an FY '87 new start and remains without controversy. Because of the project's construction status, the requested appropriation is critical.

We appreciate the privilege of appearing before the Committee and the past support given the project. We urge your continued support and ask that our statement and the attached detailed presentation be made a part of the hearing record.

The people of the central county area of Fresno County, California are deeply appreciative of the opportunity to have the presentations of their representatives heard by the honored members of the Congress. While the Redbank-Fancher Creeks Flood Control Project is not large by some standards, it is critically important to the Fresno-Clovis metropolitan area which is the business center of the most productive agricultural county in the world, gross annual production recently exceeding 2.0 billion dollars.

This report, first submitted in May 1971, has been submitted annually to substantiate the continuing vital need for flood control works specified in the Redbank and Fancher Creeks project report.

AUTHORIZATION:

The Redbank-Fancher Creeks project is a modification of the existing Fresno County Streams, California authorization incorporating the enlargement of the Big Dry Creek Dam and the containment of the balance of the stream group.

The Congress, on June 13, 1956, authorized the Corps of Engineers to reinvestigate the stream group project, this following the major floods of 1955 and 1956. Unfortunately, funds were not provided and the Corps did not begin the investigation until the area had suffered its worst flooding in history during January and February 1969. The release of funds and the start of the investigation occurred in July

1970, some fourteen years after Congressional authorization. Unfortunately, the floods of 1986 found project construction still pending.

PROJECT LOCATION AND NEED:
Redbank, Fancher, and Big Dry Creeks of the Fresno County Stream Group, their tributaries and related streams addressed by the project, are located on the western slope of the Sierra Nevada mountains. The watershed encompasses some one hundred seventy-five square miles and generates storm runoff which flows through the heart of the metropolitan area. The flows impact directly on the open irrigation canal system which transverses some 210,000 acres of the world's most productive agricultural land and 95,000 acres of a densely developed urban community with a population in excess of 400,000.

It is currently estimated that the floodplain to be protected by the proposed project includes 51,000 acres with a population of 120,000 (1982) and a market value in excess of 2.4 billion dollars. Total estimated average annual flood damages exceed $14,000,000 and affect both urban and agricultural properties.

HISTORY OF FLOODING:
As a result of the uncontrolled nature of the subject stream group, flooding has occurred frequently. Floods of record occurred in March 1938, December 1955, January 1956, January 1969, February 1969, March 1978, and January 1983. In addition, available records indicate flooding of lesser severity occurred in 1914, 1915, 1916, 1937, 1958, 1965, 1972, 1977, and 1986 with the streams and irrigation canal system overtopping their banks on the average of once every four years since 1953. Although the recent floods which occurred in March 1978, January 1983, and February 1986 were of a lesser magnitude than those of 1969, thousands of dollars in damages to private homes, public roads, irrigation facilities and hundreds of acres of prime agricultural lands were experienced. Such floods again demonstrated the urgent need for immediate construction of flood control works.

LOCAL SUPPORT:
Following the floods which occurred in January and February 1969, the Fresno area was declared part of California's disaster area. With the realization that millions of dollars in flood damage could have been prevented and that a recurrence of such floods would be even more devastating, a public hearing on the needed flood control works was held on February 28, 1969. Hundreds of the community's citizens representing some seventy-five public and private organizations met and drafted resolutions to the U.S. Army Corps of Engineers and legislative representatives urging the active pursuit of Redbank-Fancher Creeks Flood Control Project. Subsequently, the County of Fresno, the Cities of Fresno and Clovis, the Fresno Metropolitan Flood Control District, and the Fresno Irrigation District, authorized direct work with the Corps of Engineers and the Congress to secure adequate flood protection for the Fresno-Clovis metropolitan area.

In an effort to ensure the availability of lands needed for the required flood control structures, the County of Fresno acting jointly with the Fresno Metropolitan Flood Control District did, on October 22, 1974, effect open-space and conservation zoning of approximately 500 acres. More recently, the Cities of Clovis and Fresno, the County of Fresno, and the Fresno Metropolitan Flood Control District, signed contracts appropriating $335,000 per year to acquire the necessary project lands. Project land acquisition is now well underway.

Relatedly, the California Water Commission has historically supported and continues to support the project. Further, the State Reclamation Board has submitted a supporting letter of intent for local assurances. Most recently, the California Legislature has passed and the Governor has signed legislation authorizing State support of and financial participation in the project.

At the local level, a broadly based Citizens Project Advisory Committee has been created by the Flood Control District. The Committee and the sixteen community organizations and agencies it represents have reviewed and confirmed the project's need and design features. The Committee has also structured a financing plan to ensure the availability of the required local cost share and the equitable distribution of those costs.

ENVIRONMENTAL CONSIDERATIONS:
Upon completion and distribution of the Draft Feasibility Report and Draft Environmental Impact Statement, a public hearing was held within the project area by the Fresno Metropolitan Flood Control District, the local project sponsor, and the U.S. Army Corps of Engineers. Testimony submitted during the subject hearing indicated that there have been no areas of controversy associated with the project or its limited environmental impact. In summary, the testimony received confirmed the accuracy

of the Draft Environmental Impact Statement in identifying only limited impacts and the adequacy of the proposed mitigation measures. It was also apparent that any adverse environmental impact which might be associated with the project during the brief construction period would be of a temporary nature and insignificant when compared with the permanent environmental and social benefits which would be derived. Even at the current advanced stage of the project, the only negative voice has been limited to a few of those who own land required for the project. Subsequent environmental studies and actions by the local sponsor have addressed these limited points of objection.

PROJECT FEASIBILITY AND FINANCING:
The complete report, supplemented by additional detailed studies, substantiates the need for the proposed project and identifies strong economic justification. The project costs and benefits reflected by the draft General Design Memorandum are as follows:

Total First Costs (GDM)	$60,100,000	
Average Annual Costs (8-5/8%)		$ 5,380,000
Total Average Annual Benefits:		
Flood Control	$ 7,950,000	
Flood Proofing Cost Reduction	530,000	
Total Average Annual Benefits		$ 8,480,000
Benefit/Cost Ratio	1.6 to 1.0	

Noteworthy, is the fact that the project is economically justified on the basis of flood damage reduction benefits alone. While other benefits are to be produced, they are not needed to produce a positive benefit/cost ratio. It should be noted that, while not included in the actual benefit calculations, the proposed project will create significant beneficial effects in the areas of water conservation, groundwater management, wildlife enhancement and recreation.

The anticipated distribution of the project costs (based on the draft General Design Memorandum and the new cost-sharing proposals) among the Federal Government, the State of California, and the local sponsor is as follows:

Federal Government	$45,180,000
State of California	7,935,000
Fresno Metropolitan Flood Control District (Plus Annual O & M and Replacement of $227,700)	6,985,000
Total Project Cost	$60,100,000

PROJECT COST SAVINGS:
It is significant to note that the Corps of Engineers and the local sponsor have focused efforts in maximizing project design and construction efficiency. These efforts have led to certain structural reductions and constuction coordination which have produced a near 30% reduction in estimated project costs (down from $84,000,000 to $60,000,000). While each of the project units meets a separate benefit/cost test, each of the units is interdependent as to hydrological operation and construction and the savings noted above are not fully achievable without the current construction and operation of all project units.

PROJECT STATUS REVIEW:
Review of the completed project report by the Division Engineer resulted in his concurrence with the investigative conclusions of the District Engineer. Upon completion of the Division Engineer's review, additional study was undertaken at the request of the Board of Engineers, that additional study similar to that normally performed during the Phase I study which previously followed project authorization. Unfortunately, the additional study delayed the project approximately two years causing an estimated seventeen percent increase in project costs.

During July 1980, the Board of Engineers of Rivers and Harboars forwarded to the Chief of the Corps of Engineers the completed project report and environmental impact report. The report was forwarded to the Congress as House Document 98-147, bearing the date January 24, 1984. Subsequently, the project has undergone a third complete hydrological and economic evaluation during preparation of the General Design Memorandum. The results of this latest study have confirmed the previous results and cost savings.

The project has been authorized for construction pusuant to PL-662 and completion of the LCA is being pursued with the Corps of Engineers. The President's FY '87 budget provided for the first phase of construction. The President's 1987-88 budget provides the necessary continuing construction appropriation in the amount of $1,900,000. The first phase construction will produce immediate flood protection for the critically important Friant-Kern Canal of the Bureau of Reclamation's Central Valley Project.

CONCLUSION: REQUEST FOR AUTHORIZATION:
On June 13, 1986, thirty years had elapsed since Congress first authorized the proposed Redbank-Fancher Creeks Flood Control Project modification to the Fresno County Streams Project. The need for the project has been identified in a total of eight different studies and investigations performed at both the local and federal levels. The project feasibility investigation completed in July 1977 confirms the project need and identifies strong economic justification for the project construction. Further, the more advanced and detailed technical analysis associated with the completed General Design Memorandum has confirmed the project's need, economic strength, the previous recommendations of the Corps of Engineers and the requests of the local community.

Because it is our belief that the proposed Redbank-Fancher Creeks Flood Control Project has met all requirements for federal participation and meets all current standards of economic justification and environmental protection, we most respectfully urge the favorable action of the Committee and the Congress in appropriating continued construction funding for the Redbank-Fancher Creeks Flood Control Project.

NAPA RIVER FLOOD CONTROL PROJECT, CALIFORNIA

STATEMENT OF JAY GOETTING, CHAIRMAN, NAPA COUNTY BOARD OF SUPERVISORS AND NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

ACCOMPANIED BY:
HAROLD MUSKOWITE, SUPERVISOR
ED HUBER, COUNCILMAN, NAPA, CALIF.

Mr. HILL. Our next speaker is Jay Goetting, chairman, Napa County Board of Supervisors.

Mr. GOETTING. Mr. Chairman, Senator Wilson, thank you very much for this opportunity.

I also serve as chairman of the Napa County Flood Control and Water Conservation District, which will be the lead agency for our project.

Accompanying me today are Supervisor Harold Muskowite, my colleague on the board, Ed Huber, city councilman of Napa, and we are also thankful for retired Col. Frank Berger for his assistance in our preparation.

I want to just give a quick note of thanks as well to the staffs of Senators Wilson and Cranston, who have been very helpful to us as well on folks on the House side, and Senator, we appreciate your specific mention of our Napa project in your statement.

It is the unanimous statement of the councils, all the city councils of Napa County, and our board that we seek reactivation of a project. We are seeking renewed funding for the Corps of Engineers Napa River flood control project located in our county.

The local sponsor agency, as mentioned, is the flood control district. The specific action requested of the committee is support of a federal budgetary appropriation of $250,000 not currently in the President's budget for fiscal year 1988.

This amount is equal to the estimated Corps of Engineers expenditure capability and is the amount recommended by the State Water Commission. Public support has grown dramatically since experiencing the devastation caused by our flood of 1986, which you have heard mentioned a number of times here today.

The board of supervisors has determined its request asking the Corps to review not only the project previously developed, but also previously studied alternatives and other alternatives which may be practical to accomplish this much needed flood control project.

In our county of 15,000 people, we suffered financial losses over $100 million, at least three deaths attributed to last years flood alone, and now face at least $250 million in liability claims against the county as well as state and federal agencies.

Once the most practical and cost-effective project possible has been defined we are committed to seek the required local participation.

We thank you very much for your consideration.

Senator COCHRAN. Thank you, Mr. Goetting, for your testimony.

[The statement follows:]

STATEMENT OF JAY GOETTING, CHAIRMAN, BOARD OF SUPERVISORS, NAPA COUNTY (CALIF.) FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Mr. Chairman and Members of the Committee:

STATEMENT OF THE BOARD OF SUPERVISORS OF THE NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, NAPA COUNTY, CALIFORNIA IN SUPPORT OF PUBLIC WORKS APPROPRIATIONS FOR FISCAL YEAR 1988 FOR THE NAPA RIVER BASIN.

SUMMARY

This statement is in support of renewed funding for the Corps of Engineers Napa River Flood Control Project located in Napa County, California. The local sponsoring agency requesting this funding is the Napa County Flood Control and Water Conservation District. The specific action requested of this Committee is support of a Federal budgetary appropriation of $250,000 for this project in Fiscal Year 1988. This amount is equal to the estimated Corps of Engineers expenditure capability, and is the amount recommended by the California Water Commission for this project.

STATEMENT

This statement is to urge that the $250,000 funding recommended by the California Water Commission for Fiscal Year 1988 for preconstruction engineering and design for the United States Army Corps of Engineers Napa River Flood Control Project be approved by your Committee.

The Napa River Flood Control Project was authorized by Congress in 1965 under PL 298. The project extends from Trancas Street, on the north edge of the City of Napa, south to Edgerly Island, a distance of about 11 miles.

The serious extent of such flooding is shown graphically on the attached Plate I. This shows the limits of the Corps design flood through the City of Napa without the project constructed.

As a result of previous Federal funding, a multi-purpose project had progressed through design in the mid 1970's. That design included open space and recreation elements. In about 1977, the Board of Supervisors requested the Corps to place the project in an inactive status.

Since experiencing the devastation caused by the flood of February 1986, the Board of Supervisors has determined to request that the Napa River Flood Control Project be reactivated. They are asking that the Corps of Engineers review not only the project previously developed, but also previously studied alternates and other alternates which may be practical to accomplish this much needed flood control. When the most practical and cost effective project possible has been defined, the Board will make every effort to provide the required local participation.

CONCLUSION

In conclusion, it is our goal that construction on a Napa River Flood Control Project, which is designed to eliminate serious flooding hazards along the Napa River and consequently to eliminate the losses and suffering such as those experienced in 1986, be undertaken as soon as possible.

We feel that the citizens of Napa County will be supportive of a cost effective flood control project and that defining such a project is imperative. For this reason, it is vital that the $250,000 above mentioned be provided in the coming Fy 1987-88 budget. We cannot afford to experience another storm like that of February 1986 without proper flood control.

We hope that the members of the Committee will recognize the concerns and fears of the people of Napa County and of this Board and enhance the economic and environmental conditions of the people residing within the project area by supporting the funding which we have requested.

CACHE CREEK, CALIF.

STATEMENT OF CURTIS MILLER, CHAIRMAN, YOLO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, AND SACRAMENTO VALLEY WESTSIDE CANAL ASSOCIATION

Mr. HILL. Our next speaker is Curtis Miller, chairman, Yolo County Flood Control and Water Conservation District.

Senator COCHRAN. Mr. Millerp.

Mr. MILLER. Senator Cochran and Senator Wilson, thank you for the opportunity today.

I will be brief. I have two statements to read, and they are very short. The first pertains to the Yolo County Flood Control Water Conservation District request.

We are requesting support for the item 9(c) in the California Water Commission request, $100,000 to investigate the potential benefits of a dam in the Cache Creek watershed. We have a seasonal flood control problem there.

The second item, project No. 18, Cache Creek project, in two parts: $280,000 for channel enlargement of Cache Creek, and $250,000 for settling basin water on the Sacramento River.

The second part of my statement pertains to projects supported by the Sacramento Valley Westside Canal Association. We are requesting support for completion of the Tehama-Colusa Canal and delivery of water from the Central Valley project to all districts within the authorized service area.

The association reaffirms its support for performing the modifications proposed for diversion facilities for the canal project and the modifications and monitoring to resolve fishery related problems.

In addition, the association requests support for completion of the Tehama-Colusa Canal project with the construction of a large oat reservoir at the terminus of the Tehama-Colusa Canal and the delivery of water to the Yolo-Zamora Water District.

That completes my statements for today. Thank you.

[The statement follows:]

STATEMENT OF THE YOLO COUNTY (CALIF.) FLOOD CONTROL AND WATER CONSERVATION DISTRICT

As our district continues to investigate opportunities to further the management of water supplies from the Cache Creek watershed, the assistance of federal and state agencies becomes critical in carrying out specific tasks. Presently our district is in the very preliminary stages of investigating opportunities to provide control of or prevent flooding and erosion around Clear Lake and along Cache Creek, together with developing a new increment of water for consumptive and recreational uses. We also feel that a major project on Cache Creek will afford benefits to the Cache Creek settling basin and provide relief from flooding along the Colusa basin drain and the Yolo bypass.

As you know, Congress allocated $200,000 for fiscal year 1986–87 for the U.S. Army Corps of Engineers to determine the flood control and erosion benefits from controlling runoff from the Cache Creek watershed. We are optimistic that the results of their work will be positive and provide the impetus for our district to move forward in formulating a project for development of the unmanaged water from the Cache Creek watershed.

In this regard, the continued participation of the U.S. Army Corps of Engineers is important, and we would like to take this opportunity to request the support of the subcommittee in recommending that an amount of $100,000 be included in the President's budget for fiscal year 1987–88.

Over the past several years, our district has supported the U.S. Army Corps of Engineers proposed Cache Creek project, which includes enlargement of the Clear Lake outlet channel and increasing the capacity of the Cache Creek settling basin, together with the erosion and sedimentation studies.

The continued participation of the U.S. Army Corps of Engineers is important and we would like to take this opportunity to request the support of the subcommittee in recommending that an amount of $530,000 be included in the President's budget for fiscal year 1987–88 to continue development of California Water Commission project No. 18 Cache Creek.

The consideration and support of your subcommittee is appreciated.

ADDITIONAL STATEMENTS FOR THE RECORD

Mr. HILL. A statement has been submitted by Jerry Gilbert, general manager, East Bay Municipal District on the Auburn-Folsom South, which has been covered by others.

We also have several other statements which we would like to submit at this time for inclusion in the record.

Senator COCHRAN. Without objection, all of those statements will be made part of the record.

[The statements follow:]

STATEMENT OF CONTRA COSTA COUNTY AND CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SUMMARY

PROJECT	REQUESTED AMOUNT	REMARKS
WALNUT CREEK BASIN RESTUDY	$ 150,000	PLANNING - CORPS OF ENGINEER'S REVIEW OF LOCALLY PREPARED PROJECT REPORTS.
WALNUT CREEK	$5,100,000	CONSTRUCTION - PRESIDENT'S BUDGET RECOMMENDATION-CALIFORNIA WATER COMMISSION #37.
WILDCAT-SAN PABLO	$5,360,000	CONSTRUCTION - PRESIDENT'S BUDGET RECOMMENDATION-CALIFORNIA WATER COMMISSION #38.

CHAIRMAN JOHNSTON, MEMBERS OF THE SUBCOMMITTEE:

THANK YOU FOR THE OPPORTUNITY TO SPEAK BEFORE YOU TODAY. ON BEHALF OF THE PEOPLE AND THE BOARD OF SUPERVISORS OF CONTRA COSTA COUNTY, CALIFORNIA, I WISH TO THANK YOU FOR YOUR PAST SUPPORT AND APPROPRIATIONS FOR OUR FLOOD CONTROL PROJECTS. THESE PROJECTS HAVE BEEN THE FOUNDATION OF OUR COUNTY'S FLOOD CONTROL IMPROVEMENT PROGRAM AND HAVE PROVIDED IMMENSE BENEFITS TO OUR CITIZENS, BUSINESSES AND INDUSTRIES. I WISH TO OFFER THE FOLLOWING TESTIMONY IN SUPPORT OF THE RECOMMENDATIONS OF THE CALIFORNIA WATER COMMISSION IN THE HOPE OF CONTINUING THE SUCCESS OF THIS PROGRAM:

WALNUT CREEK BASIN RESTUDY - PLANNING

OUR FIRST PROJECT IS THE WALNUT CREEK BASIN RESTUDY. THE COMMISSION HAS RECOMMENDED AN ALLOCATION OF $150,000 TO FUND A PORTION OF THE CORPS OF ENGINEERS' REVIEW OF PROJECT PLANNING REPORTS FOR CREEKS AUTHORIZED FOR STUDY IN THE WALNUT CREEK BASIN. OUR FLOOD CONTROL DISTRICT IS PREPARED TO ALLOCATE $150,000 LOCAL MATCH FOR THE TOTAL $300,000 COST TO REVIEW THE REPORTS. THESE REPORTS, WHICH HAVE BEEN PREPARED AT A LOCAL COST, ARE COMPLETED OR WILL BE COMPLETED IN THE NEXT SIX MONTHS. THEY EXPLORE THE AVAILABLE ALTERNATIVES FOR THE IMPROVEMENT OF CREEKS FLOWING INTO THE SYSTEM ALREADY BUILT BY THE CORPS OF ENGINEERS. THE ENVIRONMENTAL IMPACTS AND THE PROJECTS' ACCEPTABILITY TO THE COMMUNITIES ARE BEING ADDRESSED.

WALNUT CREEK - CONSTRUCTION

THE SECOND PROJECT WE REQUEST AN APPROPRIATION FOR IS THE WALNUT CREEK PROJECT. WE HAVE BEGUN CONSTRUCTION ON CERTAIN PHASES OF THE WALNUT CREEK PROJECT AND CONSTRUCTION ON ADDITIONAL PHASES WILL BEGIN THIS YEAR. AN ALLOCATION OF $5,100,000 WILL FUND CONTINUING CONSTRUCTION COSTS FOR THE SAN RAMON CREEK BYPASS PROJECT AND THE FIRST YEAR CONSTRUCTION COSTS FOR THE UPPER PINE CREEK PROJECT. BOTH OF THESE PROJECTS DISCHARGE INTO ALREADY IMPROVED PORTIONS OF WALNUT CREEK. STORMS OF RECENT YEARS HAVE SHOWN THE TREMENDOUS VALUE OF THE ALREADY CONSTRUCTED IMPROVEMENTS. THE EXTENSION OF THE PROJECT WILL BENEFIT THE CENTRAL WALNUT CREEK AND CONCORD AREAS, THEIR CITIZENS AND BUSINESS COMMUNITIES.

WILDCAT-SAN PABLO CREEKS - CONSTRUCTION

OUR THIRD PROJECT IS THE WILDCAT-SAN PABLO CREEK PROJECT. CONSTRUCTION HAS BEGUN ON CONTRACT #1 OF REACH #1 OF THIS PROJECT. THE CALIFORNIA WATER COMMISSION HAS RECOMMENDED AN APPROPRIATION OF $5,360,000 WHICH IS CONSISTENT WITH THE PRESIDENT'S BUDGET FOR FY 1987/88. THIS ALLOCATION WILL ALLOW THE CORPS OF ENGINEERS TO CONTINUE DESIGN FOR THE CONTRACT #2 OF REACH #1, ADVERTISE THE PROJECT AND CONTINUE CONSTRUCTION.

THE COMMUNITY IS SATISFIED WITH THE CURRENT CONSTRUCTION AND IS IN FULL SUPPORT OF THE CORPS OF ENGINEERS COMPLETING THEIR STUDIES FOR THE PURPOSE OF IMPROVING WILDCAT AND SAN PABLO CREEKS THROUGH REACHES 1 AND 2. THE LOCAL PROPERTY OWNERS FORMED AN ASSESSMENT DISTRICT IN 1982 TO HELP PROVIDE THE LOCAL SHARE OF THE PROJECT. ADDITIONAL LOCAL FUNDS HAVE BEEN OBTAINED FROM ENVIRONMENTAL GROUPS FOR INCLUSION OF RECREATION AND ENVIRONMENTAL ENHANCEMENTS TO THE PROJECT.

THESE THREE PROJECTS ARE OF EXTREME IMPORTANCE TO CONTRA COSTA COUNTY IN THAT THEY PROVIDE FAR-REACHING BENEFITS TO THE PEOPLE OF THE COUNTY. WE WOULD APPRECIATE YOUR CONTINUED SUPPORT OF THESE PROJECTS.

STATEMENT OF SACRAMENTO VALLEY WESTSIDE CANAL ASSOCIATION

The Sacramento Valley Westside Canal Association (Association) hereby affirms its support for completion of the Tehama-Colusa Canal and the delivery of water from the Central Valley Project to all districts within the authorized service area. Using this opportunity, the Association reaffirms its support for performing the modifications proposed for the diversion facilities for the Tehama-Colusa Canal Project and the modifications and monitoring to resolve fishery related problems. Specifically, the Association supports and respectfully requests appropriation for Fiscal Year 1987-88, as presented on the Association's statement.

Additionally, the Association hereby expresses support for completion of the Tehama-Colusa Canal Project with the construction of a "large" Oat Reservoir at the terminus of the Tehama-Colusa Canal and the delivery of water to the Yolo-Zamora Water District. In this regard, please be advised that the Association unanimously reaffirmed its Resolution 84-1 (copy enclosed).

Your recognition and consideration of the Association's request is appreciated.

The Sacramento Valley Westside Canal Association supports and respectfully requests Fiscal Year 1987-87 appropriations for financing the U. S. Bureau of Reclamation's program item, Sacramento River Division, in the amount of $4,644,000.

SACRAMENTO VALLEY WESTSIDE
CANAL ASSOCIATION
RESOLUTION NO. 84-1

WHEREAS, there is a need to construct an adequate regulating and storage reservoir at the terminus of the Tehama-Colusa canal; and the most desirable location for said reservoir is at what is known as Oat Creek where it intersects the eventual terminus of the Tehama-Colusa canal; and

WHEREAS, it is desirable that said reservoir be of sufficient size not only for water storage but as a regulating reservoir for the Tehama-Colusa canal system; and

WHEREAS, it would be wasteful to expend funds for a smaller reservoir at this time only to have to enlarge the reservoir at a later date as water for such an enlarged service area becomes available; and

WHEREAS, an Oat Creek Reservoir of adequate size (approximately 14,000 acre-feet capacity) has been included in the Presidents's proposed budget for fiscal 1984/85 at a partial cost of approximately $8,200,000.00;

NOW THEREFORE, BE IT RESOLVED:

(1) That the Sacramento Valley Westside Canal Association supports passage of the aforesaid appropriation for fiscal 1984/85 of 8.2 million dollars for the large Oat Creek Reservoir upon the following terms and conditions:

(a) That the water supply that will become available for the Tehama-Colusa canal service area out of the Coordinated Operating Agreement between the State of California and the U.S. Government be allocated first to the service area of the Tehama-Colusa canal as it now exists; and

(b) That the legislative report in support of the aforesaid appropriation specifically provide that the appropriation shall not be construed to constitute an "authorization by appropriation;" that any extension of said service area be done only by specific legislative authorization; and

(c) That the water requirements of the Yolo-Zamora Water District receive the highest priority as it has no supplemental water supply at the present time; originally applied for a water service contract as early as 1958 and is the only water district in the entire service area lying south of and at a lower level from the proposed Oat Creek Reservoir and Tehama-Colusa canal (a gravity canal) and is, therefore, essential for the complete functioning of the reservoir as both a regulating and water storage feature of the Tehama-Colusa canal; and

(d) That present and future needs for supplemental water in the existing service area of the Tehama-Colusa canal, and for any lands which may hereafter be annexed thereto, fully anticipate and take into account the impact of the following factors:

1. Changing crop patterns in the future which may require increased allocations of supplemental water.

2. All adverse effects such as boron or other contamination in the underground water supply.

3. The fact that an inadequate supply of supplemental water leads ultimately to overdrafting of the underground water supply thus causing subsidence in underground aquifers which is irreversible.

Passed and adopted unaimously by the members in attendance at the Sacramento Valley Westside Canal Association meeting on this 17th day of March 1984.

Twyla J. Thompson
Twyla J. Thompson, President

ATTEST:

James F. Eagan
James F. Eagan, Secretary

STATEMENT OF CALIFORNIA STATE LANDS COMMISSION

The purpose of this letter is to indicate the need for continued funding in the FY-88 Appropriations Bill to the U.S. Army Corps of Engineers to continue its work to determine the feasibility of a navigable ocean entrance system at Sunset Harbor, California. Work on the feasibility study must continue in order to determine the extent of public benefits which can accrue from the project. Without the results of the study, the State, local governments and other Federal agencies such as the U.S. Fish and Wildlife Service, will not have the information necessary for informed decisions about the project. Please make this letter a part of your subcommittee's hearing record on the markup of the FY-88 Appropriations Bill.

The Sunset Harbor ocean entrance project is a "multi-purpose" project extremely beneficial to California. It will:

- o allow the creation of 915 acres of new wetland habitat in the Bolsa Chica lowlands.
- o increase coastal access and public recreational opportunities.
- o accelerate the development of a navigable ocean entrance system and public marine facilities which will generate a revenue stream capable of supporting the ecological reserve and repaying construction costs, if such is found to be technicially, environmentally and economically feasible.
- o provide an alternate passage to the ocean other than through the Naval Weapons Station at Anaheim Bay.
- o provide additional flood control measures.

This project stems from the unique provision for 100 percent Federal cost recovery. This provision, when successfully demonstrated, will set the stage for all projects of this type to be done this way in the future, thus insuring that the Federal government will realize a total return on its money. (Sections 916 and 1119 of the Water Resources Development Act of 1986 delineate these provisions.)

The feasibility study to be performed by the Corps will incorporate the results of modeling of both navigable and non-navigable ocean entrance system alternatives soon to be conducted by the U.S. Army Corps of Engineers Waterways Experiment Station (WES) in Vicksburg, Mississippi, under contract with the California State Lands Commission as the "Local Sponsor". The Commission will provide $700,000 to the Corps for completion of the modeling study. These monies to be credited against the non-Federal share of the cost of the project.

We encourage your subcommittee to make funds available to the Corps to a level which is consistent with the action of Congress in Section 1119(a) of Public Law 99-662 (H.R. 6) which authorized $900,000 for completion of the feasibility study of the navigation project for Sunset Harbor, California. The Commission is cooperating with the project sponsor, Signal

Landmark, the U.S. Army Corps of Engineers and the local governments all of which must rely on the feasibility study in order to make decisions about constructing a navigable ocean entrance system at Sunset Harbor.

Approval of an appropriation in the FY-88 Appropriations Bill for the Sunset Harbor project will allow work to proceed on this critical phase of the overall Sunset Harbor project.

STATEMENT OF CHARLES F. WILSON III, RUMSEY, CALIF.

It has come to my attention that your subcommittee is currently studying the feasibility of placing a damn on Cache Creek (Blue Ridge Site (9C)) in Yolo County, California. This leads me to voice the following serious concerns about this mistaken concept.

Please consider the following four reasons why this is not the appropiate site for such a project:

1) Abundant seismic activity is well known in Northern California. This seismic activity combined with geological features in Cache Canyon such as vertical slip faults and a rock type not suitable for building such a project add~~s~~ up to a big mistake.

2) The area that will be submerged by the water behind this damn is the habitat of the bald eagle - an endangered species.

3) This water is needed to feed the aquifer that the cities of Davis and Woodland, California depend on for their ground water. The most critical underground pollution in Yolo County is beneath Davis and the ground water that is needed to flush this area will be diverted by the Blue Ridge Project.

4) Cache Creek is currently one of the most popular recreation rivers in Northern California. Each year well in excess of 100,000 people use this river for rafting, canoeing and kayaking. This project would completely curtail this recreational resource.

I implore you to make certain that facts are studied prior to allocation of funds for this project. Living only 40 seconds below this proposed damn site (that's how long it would take for water to reach my home in case of a damn break), my community certainly has reason to make our concerns known.

The reason for building this damn is to store additional water for further growth in Southern California. I have no problem with Southern California's plans for additional growth; but, not at the expense of jeapordizing the safety of the entire valley in which I live.

STATEMENT OF JEROME B. GILBERT, GENERAL MANAGER, EAST BAY MUNICIPAL UTILITY DISTRICT

The East Bay Municipal Utility District, which supplies water for municipal and industrial uses to 1.1 million people in a 300-square-mile area of Alameda and Contra Costa Counties on the eastern side of San Francisco Bay, supports the California Water Commission's recommendations regarding appropriations for Federal Flood Control and Reclamation Programs in California for fiscal year 1987-88.

Specifically, the District urges appropriation for the following project (reference California Water Commission Summary dated Janaury 23, 1987)

No. 47	Auburn-Folsom South Unit	$1,000,000

The District has a twofold interest in the completion of the Auburn-Folsom South Project: first, as a contractor for project water; and second, as an indirect beneficiary of water imported to that portion of the Folsom South service area which lies downstream from the District's primary water source reservoirs in the Mokelumne River basin.

Extensive groundwater pumping in the vicinity of the lower Mokelumne River is causing substantial seepage loss, much of which must be replaced by releases of water stored by East Bay Municipal Utility District for its own use. As these seepage losses increase, the dependable yield of the District's Mokelumne River Project is reduced proportionately. Since the Mokelumne River Project supplies more than 90 percent of the District's water, the project yield is of major concern.

For more than thirty years, the expected solution to this problem has been an imported surface supply from the Auburn-Folsom South Project. San Joaquin County agricultural interests along the lower Mokelumne River have also looked to this project to meet their long-term water requirements. Currently the District provides storage, on an interim basis, to some of these agricultural interests. Without the Auburn-Folsom South Project, their water requirements will eventually have to be met from groundwater. Since the groundwater basin is already classified as critical, increased pumping on that basin can only result in accelerated decline in the groundwater table. This consequence could prove disastrous to agriculture and the local communities.

In cooperation with San Joaquin County interests, the District has completed a groundwater study which developed a model of the groundwater basin. The model will provide information as to the best use and the best place for use for the imported surface supply from the Folsom South Canal.

The District believes it is most important that the Auburn-Folsom South Unit of the Central Valley Project be constructed at the earliest possible date. Auburn Dam, when completed, will significantly reduce the likelihood of flooding in the Sacramento area. Auburn would also provide additional storage to maintain the downstream flow requirements established for the lower American River by the State Water Resources Control Board.

For the above reasons, East Bay Municipal Utility District seeks your Committee's support for this project.

STATEMENT OF LARRY M. BAGLEY, MAYOR, OCEANSIDE, CALIF.

The City of Oceanside urges your support for continuing funding for the San Luis Rey River Flood Control Project in FY88. Last year, Congress appropriated funds to initiate construction on this vital project. Work is expected to be underway this Summer on the first project reach. The Administration has proposed $8.5 million in FY88 for continued construction of the project.

Approximately 7,000 persons live or work in the flood plain area that will be protected by the project. Lands and improvements in the flood plain are valued at $550 million. A standard project flood could be expected to cost over $100 million in damage in the San Luis Rey Valley. Even the relatively minor storms (less than 10 year flow) in recent years have caused over 5 million in damage.

The City of Oceanside has agreed to cost-sharing for the project, and is anxious to see construction proceed. I urge your strong support for inclusion of funds for this project in the FY88 budget.

STATEMENT OF FRANCES AND DAVID LOONEY, RUMSEY, CALIF.

This letter is in response to the California Water Commission's recommendations to Congress for funding FY 87-88, specifically Corp project 9C Blueridge and 18 Cache Creek, the enlargement of the Clearlake outlet.

My husband and I farm property in Yolo County along Cache Creek. We are greatly concerned about the possibility of the enlargment of the Clearlake outlet. The increased flows caused by this action will surely compound an already existing erosion problem, causing loss of prime class one soil. Clearlake does experience serious flooding when lake levels rise, but the problem is caused by the past failure of Lake County to prohibite building in the flood plain.

The Yolo County Flood Control and Conservation District, who is in the business of selling water, has proposed a one million acre foot dam, The Blueridge, as a solution to our problem. It is our concern that a dam of this size and located only a few miles from our community, will only make our problems worse. The increased flows and the creation of a year-round live stream would increase erosion problems and make bank repair and maintance exceedingly difficult if not impossible. We are hopeful that an alternative solution to Clear lakes problems can be found that would not be at our expense. For these reasons we ask that the Senate Appropriations committee not fund items 9C Blueridge and 18 Cache Creek, Clearlake outlet enlargement.

CLOSING REMARKS

Mr. HILL. That, Mr. Chairman, completes the testimony of our group. I am very appreciative, as we all are, of the opportunity to appear before you, and thank you very much.

Also, I would like to thank our people, who have left, for their brevity.

Senator COCHRAN. Mr. Hill, you have done and excellent job of organizing this and the witnesses in presenting their testimony and their statements. We appreciate that cooperation very, very much.

Mr. HILL. Thank you very much, and thank you, Senator Wilson.

Senator COCHRAN. Let me announce to those others that are waiting to testify as part of this hearing this afternoon that we are going to take a temporary recess right now because there is a vote occurring on the floor of the Senate, which we have to attend to.

I will return as quickly as possible and we will reconvene the hearing upon my return. Until then, we stand in recess.

[A brief recess was taken.]

SAN LUIS REY RIVER, CALIF.

STATEMENT OF ALEX DEUTCH

Senator COCHRAN. The committee will come to order.

Mr. Alex Deutch, we welcome you to the committee, and we understand you are testifying in connection with the San Luis Rey River project.

Mr. DEUTCH. Mr. Chairman, thank you.

There was a problem on the San Luis Rey River flood control project between the participants, the city of Oceanside, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the property owners.

The direct requirements of the participants are: The city wants to protect life and property. The Corps wants to see to it that a good channel is constructed and also help the environment. The Fish and Wildlife now enters with Least Bells Vireo, an endangered species. The nesting habitat demands a new location. The old single levy plan has to be drastically modified for lease bills varial existence. Four, the property owners want to protect their property.

Last night, the Corps brought—and I was hoping to say this in front of Senator Pete Wilson. I wanted to watch the expression on his face.

Senator COCHRAN. I will tell him.

Mr. DEUTCH. He has been involved in this battle since he has been in office.

Last night the Corps brought a message to the city and the property owners. A request from Fish and Wildlife to modify the single levy plan.

This new plan, just reborne, has to be developed, expanded, and executed. The Corps plan is to work with U.S. Fish and Wildlife, the city, and the property owners.

All of the old objections can be overcome with the change in the single levy plan, including the removal of all groins, including the city's request for 100-year flood control instead of the project floods.

The attempt to use the levies now in existence, built by the property owners, and a reduction of acreage required for the project. The above changes make me in favor instead of opposed to the San Luis Rey project.

What I have been opposing to all these years, I can now support. Last of all, the single levy plan calls for an expenditure of $45 million; $16.5 million was the city's portion for land acquisition. My own estimate is double that amount.

If the Corps and the city works with us, I will do my best to get all of the land and the river donated in some form for use of the project at no cost to the city.

There are only 16 property owners in the whole stretch; 7 of them have already agreed. I think I can convince everybody to donate their part of the river as long as they get to use their land.

Thank you very much.

Senator COCHRAN. It was a very interesting story. I will be sure to convey this information to Senator Wilson.

Mr. DEUTCH. There is one more thing. My evidence is destructive and it doesn't work any more because all of the things I am complaining about they have agreed to, so I have asked, and he has given me a couple of weeks to send in my new testimony, which I will do.

Senator COCHRAN. We would, of course, assure you that that will be included and made a part of the record. We appreciate your testifying before our committee today. Congratulations.

Mr. DEUTCH. Thank you.

[The statement follows:]

LETTER FROM ALEX DEUTSCH, CALIFORNIA

April 8, 1987

Senator J. Bennett Johnston, Chairman
136 Hart Building
Washington, D.C. 20510

Gentlemen:

Please accept my thanks for letting me put in a substitute for my original presentation which was abhorted and made useless by our meeting with the Corps of Engineers the night of March 31st.

The following presentation is my speech in front of the Senate Subcommittee plus the few comments.

Sincerely,

Alex Deutsch

Alex Deutsch

There was a problem.

The Participants

1) City of Oceanside.

2) U. S. Corps of Engineers.

3) U. S. Fish and Wildlife.

4) Oceanside property owners.

The Direct Requirements Of The Participants.

1) The City wants to protect life and property.

2) The Corps wants to see to it that a good channel is constructed and also does not harm environment.

3) U.S. Fish and Wildlife --- enter Least Bells Vireo, an endangered specie, the habitat demands a new location. The old single levee plan has to be drastically modified for L.B.V. existence. U.S.F.W. primary goal is to support L.B.V. in this area.

4) The property owners want to protect their property and not suffer economic injury.

Last night the Corps brought a message to the City and the property owners, a request from the U.S.F.W. to modify the single levee plan. This new plan just reborn has to be developed, expanded, and executed. The Corps plan now is to work with the City, the U.S.F.W. and the property owners. All of the old objectives can be overcome by working together.

With The Change In The S.L. Plan:

1) Including the removal of all groins.

2) Including the City's request for 100 year flood control instead of the project flood control.

3) The Corps attempt to use the levees now in existence and built and paid for by the property owners.

4) The reduction of acreage required by the project bringing about a lower cost.

5) Recognizing the need for 8500 feet of levees on north side, most of which is already built.

The above changes places me in favor instead of being opposed as in my original presentation.

Last of all, the S.L. plan calling for an expenditure of $45,000,000, of which $16,500,000 was the City's portion for single levee land acquisition. My own estimate is a much higher levee land acquisition cost. If the Corps and the City work with us, I will do my best to get all the land in the river donated by the property owners in some form for use in the project at no cost.

An agreement reached between the Mayor of Oceanside, Col. Butler of the Corps of Engineers and Alex Deutsch representing certain property owners causing the removal of property owner's objections, should take care of the two most important issues.

1. Protecting the endangered specie.

2. Saving the American tax payer at least half of the previous total cost estimate.

Somehow all the above should be included in the appropriation.

INLAND WATERWAY IMPROVEMENT PROJECTS

STATEMENT OF BARRY PALMER, EXECUTIVE DIRECTOR, DINAMO/OVIA

ACCOMPANIED BY:

DAVID KREUTZER, GENERAL MANAGER, MARINE DIVISION OF CONSOLIDATION COAL CO.

MARK GABOR, LEGISLATIVE REPRESENTATIVE, UNITED MINE WORKERS OF AMERICA

EDWARD R. HAMBERGER, ESQUIRE

Senator COCHRAN. Our next witness is Mr. Barry Palmer, who is executive director of DINAMO/OVIA. He will be testifying concerning the Ohio River navigation system improvements.

Welcome, Mr. Palmer, you may proceed.

Mr. PALMER. Thank you Mr. Chairman. I would like to introduce the others that are with me today. On my left and your right is Mr. David Kreutzer, who is the general manager of the Marine Division of Consolidation Coal Co. in Pittsburgh, Pa.

On my right, and your left is Mr. Mark Gabor, the legislative representative of the United Mine Workers, and on his right is Mr. Ed Hamberger, counsel to DINAMO/OVIA with Lipsen, Hamberger here in Washington.

Mr. Kreutzer's boss, Bobby Brown, is chairman and CEO of Consolidation Coal Co. is our chairman, and Mr. Trunk is also a member of the board of directors.

As you indicated, I am executive director of DINAMO/OVIA, the Association for the Development of Interstate Navigability in America's Ohio Valley. We are a broad coalition of business, labor, and state government leaders from throughout the Ohio Valley, working toward modernization of our region's locks and dams.

The improvement of these locks and dams—and these lock and dam structures are critical to sustaining the economic stability of a region of our nation that is only beginning to recover from severe economic change.

Amid \these changes, the constant has been the river and its continuing importance as an economic generator. We believe that orderly modernization improvements will be needed to the locks and dams in the Ohio Valley now and in the future, if we are to sustain the base manufacturing and mining economic activity in our region and encourage its future growth.

I appear on behalf of our executive committee and board of directors, to present the recommendations of our leadership from business, labor, and state government for fiscal year 1988 appropriations for inland navigation projects and studies in the Ohio River basin.

Mr. Chairman, we are here today to request not only the continued support of this distinguished committee for levels of spending outlined in the President's fiscal year 1988 budget, but also to request additional monies for Gray's Landing and the Olmstead projects, as well as additional monies for the Ohio River main stem study.

We have attached to our testimony a letter of capability for these additional monies from the Ohio River Division Commander, Col. Ernest J. Harrell, and we have also attached construction schedules for those projects that were authorized last year in addition to the Olmstead project.

Specifically, we are asking for $6.8 million total. That is to initiate construction for replacement of lock and dam No. 7 on the Monongahela River and an additional $1 million totaling $2.5 million for the continued study, advance study for replacement of locks and dams 52 and 53 on the Ohio River on the Illinois and Kentucky border.

Also a level of spending of $2,331,000 for the Ohio River main stem study to enable the Corps the additional request for $300,000 to enable the Corps to work more closely with our regional states in industrial development activities.

For more than a decade the inland navigation interests of the nation have been paying an increasing level of tax on diesel fuel consumed by tow boats operating on the waterways system.

Last year, we were once excited and relieved that the Congress and the administration had come to an agreement on a funding mechanism for lock and dam modernization projects in the future. We agreed to accept the compromise struck in 1985 in return for a program of improvements to America's inland navigation system.

We believe that the affects of further stalemate were worse than acceptance of the cost sharing and increased tax provision. As one result, congressional authorization was given to replace four locks and dams on the Ohio River system, Gallipolis, Monongahela River locks and dams 7 and 8, and Winfield on the Kanawha River.

In the Ohio Valley we have a great deal at stake, given the nation's inland navigation infrastructure needs and the increased taxes gathering in the inland waterways trust fund.

A small part of the stakes is found and the benefits realized when each of the new locks is in full operation. On page 3, you will see a table of the Corps recommended projects, not only the four but also the Olmstead project, which would replace 52 and 53.

When modernization is completed, Gallipolis and the Monongahela River 7 and 8, and Winfield and contributions to the national economic development account will be $253.6 million annually, and alone for the Olmstead project we are talking in excess of $1.5 billion.

While the economic impacts of lock and dam improvements result in transportation savings to the nation, their affect on a region or a state's economy is even more pronounced. There is a lot to say.

We have been busy—and I am moving now to page 4, to the middle of the page. With these factors in mind that is the agreements on taxes and cost sharing and importance economically of that river system and the locks and dams to our region's economy and to the economy of our state.

We met with the Assistant Secretary of the Army last December, Bob Dawson, and then with the Director of the Office of Civil Works, General Hatch and his people. At that time, we asked the administration to examine their management practices in an effort to accelerate the planning and engineering design and construction of the nation's lock and dam modernization projects.

We are encouraged, Mr. Chairman, that some important initiatives may be instituted in the future. At this point, Mr. Chairman, we would request that the record might be kept open for some period of time, because of our work with the Corps of Engineers, there may be some additional capabilities for some of these projects and we would like to have the opportunity to present that additional capability if it should arise within the next several weeks.

Senator COCHRAN. That will be certainly all right with the committee and we would include that as an addendum to your testimony if you do submit that.

Mr. PALMER. Thank you, Mre Chairman.

We met with the Corps of Engineers' officials at the district and the division levels as well as the people here in Washington, DC.

At each meeting we have encouraged them to accelerate the process for planning, design engineering, and construction. We believe there are adequate sources of monies gathering in the inland waterways trust fund to pay for expeditious action of these improvement projects, and if need be, Mr. Chairman, we recommend that some of the nearly $300 million in the trust fund be advanced to pay for prompt implementation of construction at these projects.

We have often sought the support of this important committee to advance modernization of our nation's locks and dams, Mr. Chairman. We are most appreciative and grateful. We know this committee's commitment to improving the nation's lock and dam infrastructure and it is important to note, Mr. Chairman, and that where additional appropriations have been requested for a regions locks and dams, and where they have been provided the Corps of Engineers at the division and the district levels have met the targeted work levels.

As a matter of fact, our leadership and our membership are meeting with each district and with the division people on a quarterly basis to monitor their work, to make sure that we keep these projects on the targeted time schedule and because of this relationship that we are building—have developed and are continuing to build and to monitor their progress—we believe that the Corps in our region, district, and divisional level, merit the continuing support of all of us in expediting construction for Gallipolis, the Monoogahela River projects, Winfield, and Olmstead.

Thank you, Mr. Chairman.

Senator COCHRAN. Thank you for your excellent statement, Mr. Palmer. You have compiled a lot of impressive information for the committee and we appreciate that. I happened to notice the chart in here that shows the tonnage going to each state in these systems that you have identified, the economic impact, all along the line.

Mr. PALMER. Yes.

Senator COCHRAN. That is very important to know and helps justify to some of the other members of the subcommittee, why they should support some of these projects.

We appreciate your being here, all of you present, and we thank you for your assistance to the committee. Thank you very much.

[The statement follows:]

STATEMENT OF R. BARRY PALMER, EXECUTIVE DIRECTOR, ASSOCIATION FOR THE DEVELOPMENT OF INTERSTATE NAVIGABILITY IN AMERICA'S OHIO VALLEY (DINAMO/OVIA)

My name is Barry Palmer. I am Executive Director of DINAMO/OVIA, the Association for the Development of Interstate Navigability in America's Ohio Valley. We are a broad coalition of business, labor, and state government leaders from throughout the Ohio Valley working towards modernization of our region's lock and dam facilities. The improvement of these lock and dam structures is critical to sustaining the economic stability of a region of our nation that is only beginning to recover from severe economic change. In the 1980's we have seen a tremendous economic transition in the industrial heartland of America -- throughout those states that are affected by the Ohio River navigation system. Amid these changes, the constant has been the river and its continuing importance as an economic generator. We believe that orderly modernization improvements will be needed to the locks and dams in the Ohio Valley now and in the future, if we are to sustain the base manufacturing and mining economic activity in our region and encourage its future growth.

I appear on behalf of DINAMO's Executive Committee and Board of Directors to present the recommendations of the Ohio Valley's business, labor, and state government leadership for FY 1988 appropriations for inland navigation projects and studies in the Ohio River Basin. Mr. Chairman, we are here today to request not only the continued support of this distinguished committee for levels of spending outlined in the President's FY 1988 Budget, but also to request additional monies for the Gray's Landing and Olmsted projects, as well as additional monies for the Ohio River Main Stem Study. This request for increased funding at Gray's Landing and Olmsted coincides with the capability of the Corps of Engineers to build these projects in the time frame outlined in the attached construction schedules developed by the Ohio River Division Commander, Colonel (P) Ernest J. Harrell, Jr. You may note that replacement of Monongahela River Locks and Dams 7 and 8 are not scheduled to be fully operational until 1995, Winfield until 1996, and the Olmsted Lock and Dam until 2000. Also, attached is a letter from the Ohio River Division Commander outlining the Corps of Engineers capability for these projects.

A summary of our requests is as follows:

(1) For the Gallipolis Locks modernization project on the Ohio River, OH/WVA, $8,000,000, to initiate construction.

(2) For Gray's Landing Locks and Dam modernization project, also known as the replacement of Lock and Dam 7, Monongahela River, PA, $6,800,000 to initiate construction. The President's Budget includes only $3,300,000 and does not budget for a new start construction.

(3) For Point Marion Lock modernization project, also known as the replacement of Lock 8, Monongahela River, PA, $1,100,000, for further engineering and design.

(4) For the Winfield Lock replacement project, Kanawha River, WVA, $1,750,000 for advanced design and engineering.

(5) For the Olmsted Lock and Dam construction project, to replace Locks and Dam 52 and 53, Ohio River, KY/IL, $2,500,000 for advanced design and engineering. The President's Budget contains only $1,500,000 for advanced design and engineering on a project already approved by the Chief of Engineers that will cost more than $600,000,000 to construct before the end of this century.

(6) For the Ohio River Mainstem study, including Emsworth, Dashields, Montgomery Island, and McAlpine Locks and Dams, $2,331,000 . The President's budget contains only $2,031,000, and additional funding in the amount of $300,000 will allow the Corps of work with regional states and industry during FY 1988, for assessment of 1) location specific economic and environmental impacts of navigation related development actions, and 2) relationships among Ohio River

Navigation improvements and resulting economic activities, such as capital investments for industrial development, marine services and port improvement. This increased funding would also further the Corps to contribute more accurate and comprehensive estimates of the economic benefits and impacts of navigation improvements. Such continuous data and information interface between the Corps and the waterway user/shipper community is critical and very necessary to facilitate the new public/private sector partnership under PL 99-662.

(7) For the Lower Cumberland and Lower Tennessee Rivers, KY, $1,220,000 for feasibility of improvement to river bends on the Cumberland River, and the feasibility of modernizing the Kentucky Lock on Tennessee River.

(8) For the Monongahela River Locks and Dams #2, #3, and #4, PA, $850,000 needed to complete condition studies and initiate a Draft Report.

(9) For the Marmet Locks, Kanawha River, WVA, $400,000 for economic & environmental investigations.

We are keenly aware of the political currents this year to restrain spending in FY 1988, while easing the burden of the deficit by increasing taxes. For more than a decade the inland navigation interests of the nation have been paying an increasing level of tax on diesel fuel consumed by towboats operating on the waterways system. Last year we were at once excited and relieved that the Congress and the Administration had come to an agreement on a funding mechanism for lock and dam modernization projects in the future. We agreed to accept the compromise struck in 1985 between the Senate Republican leadership and former OMB Director David Stockman to accept increased taxes on our waterways in return for a program of improvements to America's inland navigation system. We believed the effects of further stalemate were worse than acceptance of the cost-sharing and increased tax provisions. As one result, Congressional authorization was given to replace four locks and dams on the Ohio River system: Gallipolis, Monongahela River Locks and Dams 7 and 8, and Winfield on the Kanawha River.

We in the Ohio Valley have a great deal at stake, given the nation's inland navigation infrastructure needs and the increased taxes gathering in the Inland Waterways Trust Fund. Last year, our DINAMO/OVIA Chairman, B. R. Brown, Chairman and C.E.O., Consolidation Coal Company, addressed the issues of needs and taxes in his closing remarks to the Annual Meeting of the National Waterways Conference. He said, "Think a moment of our real business objective. It is not to reduce our taxes per se. What we want to reduce are our costs. Given the condition of navigation on the Ohio System today, those costs are too high. And they are growing. We have experienced delays more than 48 hours in some places. Even 72 hours. That means more boats and less productivity." The 72 hour delays he was talking about occurred at Gallipolis Locks and Dam. A routine, 3-day maintenance repair to the gates at Gallipolis Locks turned into a nightmarish, three week shutdown.

We talk often about the "stakes" involved. A small part of the "stakes" is found in the net benefits realized when each of the new locks is in full operation. Following is an outline of the Corps of Engineers Total Annual Benefits, Annual Cost, and Net Annual Benefits for five priority locks and dams in the Ohio Valley:

CORPS OF ENGINEERS RECOMMENDED PLANS

Project	Total Annual Benefits ($ millions)	Annual Cost ($ millions)	Net Annual Benefits ($ millions)
Gallipolis	170.1	14.4	155.7
Monongahela River 7 & 8	61.25	15.95	45.3
Winfield	70.1	17.5	52.6
Olmsted	1,738.7	73.4	1,665.3

When modernization is complete at Gallipolis, Monongahela River 7 and 8, and Winfield, the net contributions to the national economic development account will be $253.6 million annually. These net annual benefits consist of a reduction in transportation costs (delays) for traffic moving under current conditions and projected traffic growth that will move only if modernized navigation facilities are constructed. The National Economic Development (NED) benefits for the Olmsted project are $1,665.3 million.

While the economic impacts of lock and dam improvements result in transportation savings to the nation, their effect on a region or state's economy is more pronounced. Attached to this testimony is a summary of a study we are now completing to determine the waterborne commerce of the Ohio River System and the associated economic activity of that commerce in the eight states directly served by the System.

The diversion of the production or consumption to other regions outside of the Ohio Valley because old, deteriorating, or obsolete facilities cannot accommodate commerce is not a satisfactory option for the economic and political leadership in our region.

Last year, DINAMO/OVIA presented an analysis of our long-term outlook for six key industries: coal, steel chemicals, petroleum and petroleum products, chemicals, and agriculture. In each case, all of the signs pointed to a future with expansion, growth, and a continued reliance on low-cost water transportation. The factors that supported our contentions continue. We must, however, continue to dispel a myth we hear often outside of the Ohio River Basin. The myth suggests that the industries making the most use of the inland waterways are now in decline and there is no longer any need for the same level of waterway improvement and maintenance as in the past. If we looked at a few discrete industries in a few places, you could make that case. If you look at the entire Ohio River Basin Economy, you have seen slower growth relative to that of some other regions of the United States. But you do see growth.

In 1984 the Ohio River System carried more than 123 million tons of coal traffic. Think also of the ferrous scrap, steel products, and iron ore. Think of the 13 million tons of chemical products, the 13 million tons of petroleum products, and the nearly 21 million tons of aggregates that moved on the Ohio System. In all the Ohio River system transported 202 million tons of commerce, which had a value of nearly $16 billion. About 51 million tons of this waterborne commerce was exported from the region, while the Ohio Basin received 37 million tons from outside of the region, principally from the southern Gulf states. If the river cannot move this freight, most of it won't move at all. It is simply a matter of the economics of waterborne commerce.

With these factors in mind, the DINAMO/OVIA leadership visited last December with the Assistant Secretary of the Army (Civil Works) Robert K. Dawson and then with the Director of the Office of Civil Works, General Henry Hatch. At that time, we asked the administration to examine their management practices in an effort to accelerate the planning, engineering, and design of the nation's lock and dam modernization projects. We are encouraged that some important initiatives may be instituted in the future.

DINAMO/OVIA members have also met with Corps of Engineers officials at the District and Division levels, as well as at the Washington, D.C. level. At each meeting, we have encouraged the Corps of Engineers to accelerate the process of design, engineering, and construction. There are, we believe, adequate sources of tax revenue in the Inland Waterways Trust Fund to pay for expeditious action of these improvement projects. If need be, we recommend that some of the nearly $300 million in the Trust Fund be advanced to pay for prompt implementation of construction at these projects.

Mr. Chairman, we have often sought the support of this important committee to advance modernization of the nation's locks and dams. We are most appreciative and grateful. We know of this committee's committment to improving the nation's lock and dam infrastructure. And it is important to note, Mr. Chairman, that where additional appropriations have been requested for our region's locks and dams, the Corps of Engineers at the Division and District offices have met the targeted work levels. Execution of engineering, design, and planning activities throughout the Ohio River Division and its Districts has been professional and business-like. Additionally, we have been meeting with the Corps officials quarterly to monitor their progress in carrying out the full capability of their work load. In this regard, Mr. Chairman, we believe that the Corps of Engineers in the Ohio River Division and area Districts merit the continuing support of all of us in expediting construction for Gallipolis, the Monongahela River projects, Winfield, and Olmsted.

Thank you for your continuing interest.

LETTER FROM COL. ERNEST HARRELL, CORPS OF ENGINEERS, OHIO RIVER DIVISION ENGINEER

10 MAR 1987

Mr. R. Barry Palmer
Executive Director
DINAMO/OVIA
Three Gateway Center
Pittsburgh, Pennsylvania 15222

Dear Mr. Palmer:

This is in response to your letter of February 13, 1987 requesting a summary of anticipated FY 1988 funding capabilities for lock and dam construction and planning projects relative to the Ohio River Navigation System.

I am, therefore, enclosing a table of the aforementioned subject information. If you have any questions regarding this material, please contact Mr. Lou Listermann of my staff at (513)684-3081.

Sincerely,

Ernest J. Harrell
Colonel, Corps of Engineers
Division Engineer

Enclosure

CORPS OF ENGINEERS
FUNDING CAPABILITIES FOR FISCAL YEAR 1988[1]
OHIO RIVER NAVIGATION SYSTEM

DATE: March 9, 1987

NAME OF SURVEY OR PROJECT	CATEGORY	CAPABILITY	PURPOSE OF ADDITIONAL CAPABILITY
Ohio River Main Stem	(S)[2]	$2,331,000	Advance study completion 2 months.
Locks and Dams 52 and 53 (KY)	(P)[3]	$2,500,000	Advance study completion 4 months.
Gallipolis Locks and Dam	(C)[4]	$8,000,000[5]	------
Grays Landing Lock and Dam	(C)	$6,800,000	Initiate project construction.
Point Marion Lock	(C)	$1,100,000	------

[1] Although project and study capabilities reflect the readiness of the work for accomplishment, they are in competition for available funds and manpower Army-wide. In this context, the Fiscal Year 1988 capability amounts shown consider each project or study by itself without reference to the rest of the program. However, it is emphasized that the total amount proposed for the Army's Civil Works Program in the President's Budget for Fiscal Year 1988 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments and the objectives of avoiding large budget deficits and the serious adverse effect that Government borrowing is having on the national economy. Therefore, while we could utilize additional funds on individual projects and studies, offsetting reductions would be required in order to maintain our overall budgetary objectives.

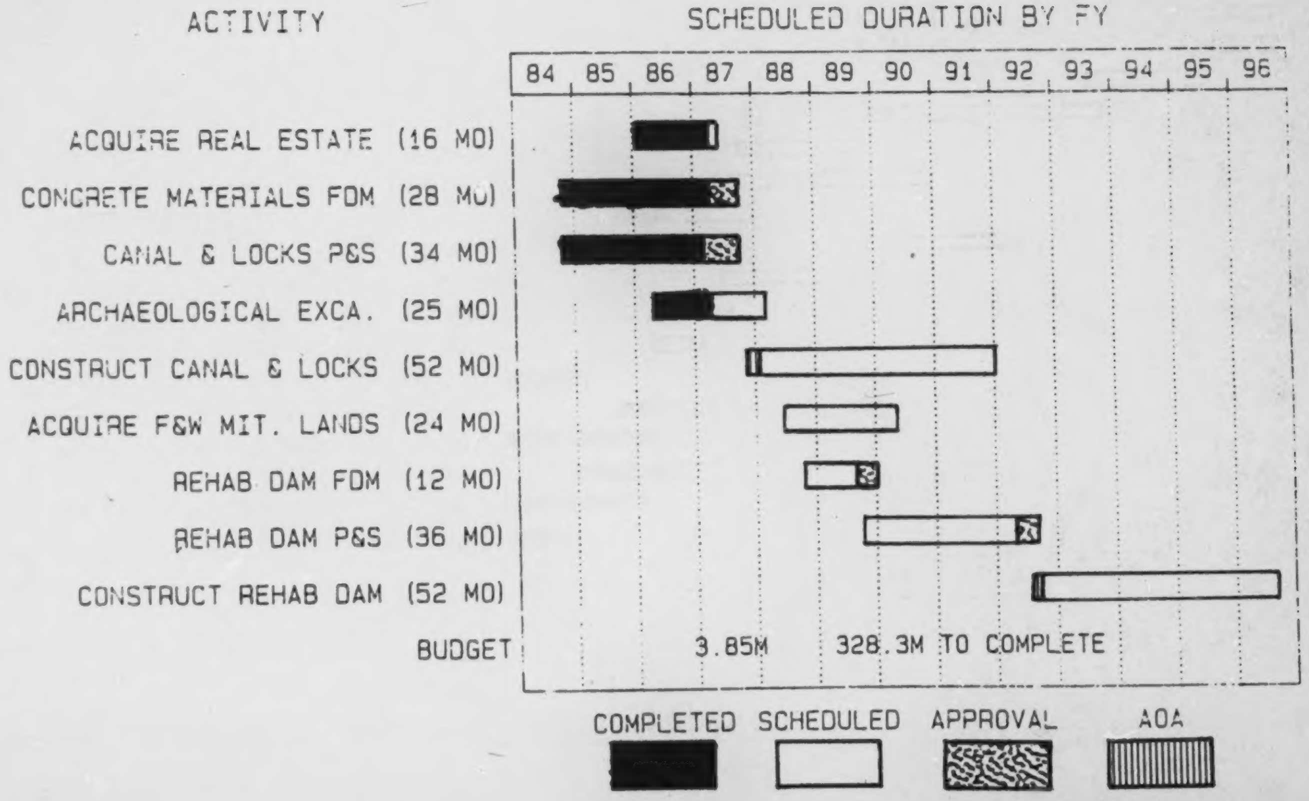
[2] (S) - Study

[3] (P) - Preconstruction Engineering and Design (PED)

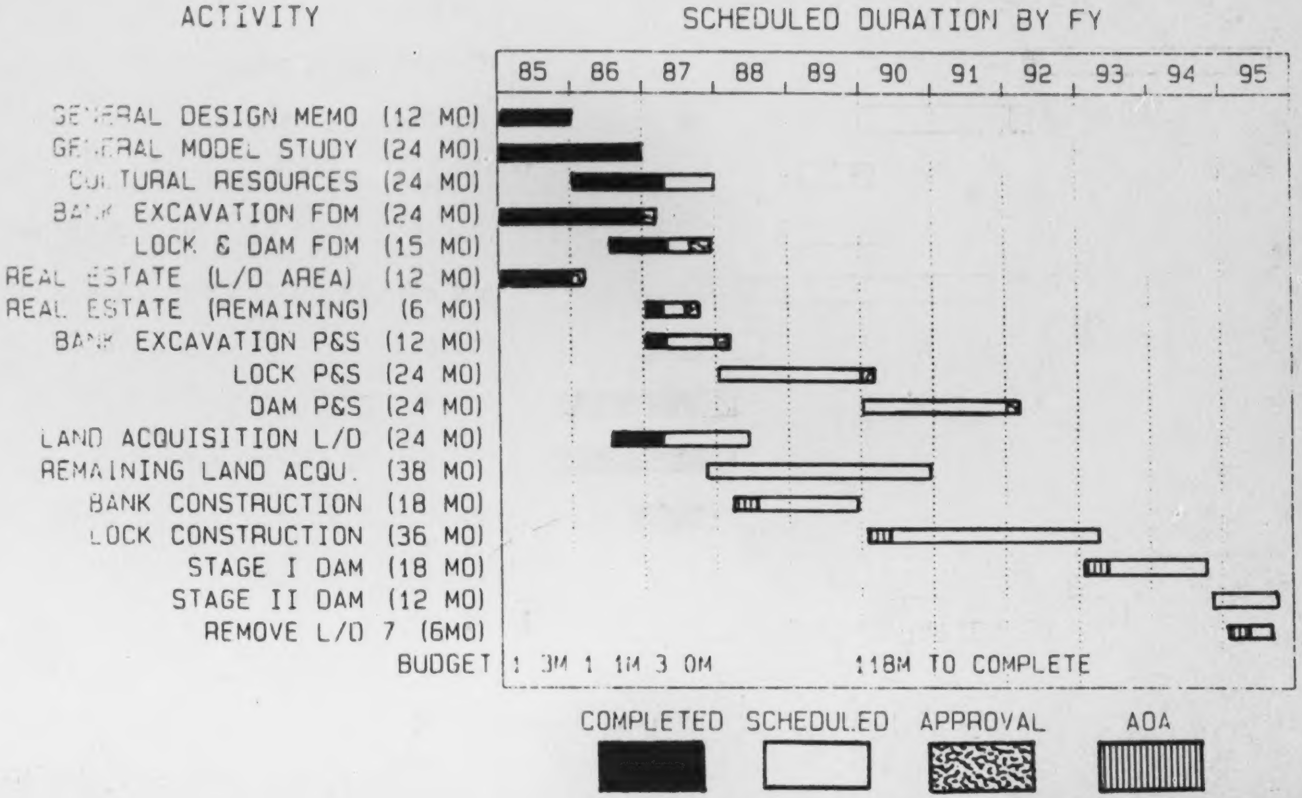
[4] (C) - Construction

[5] Includes $4,000,000 from the Inland Waterways Trust Fund.

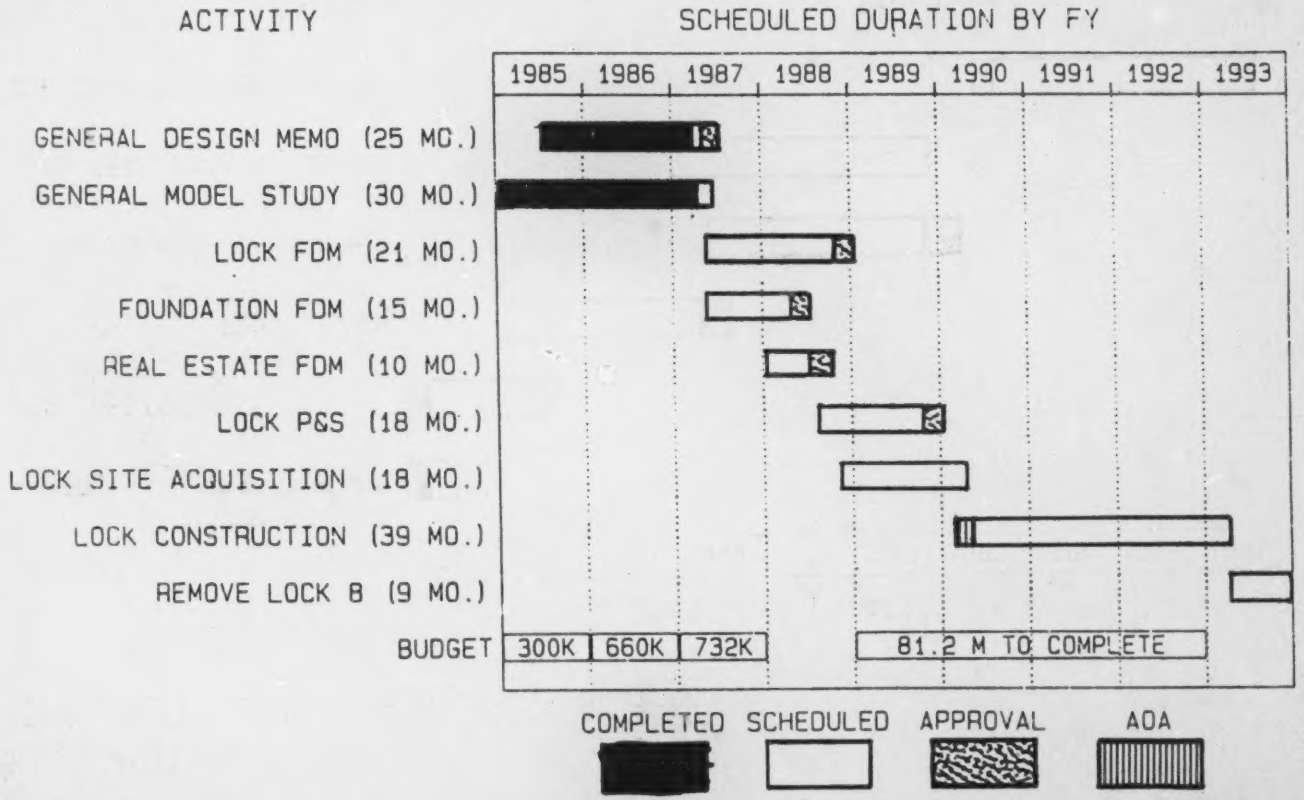
HUNTINGTON DISTRICT
GALLIPOLIS LOCKS & DAM - PROJECT SCHEDULE



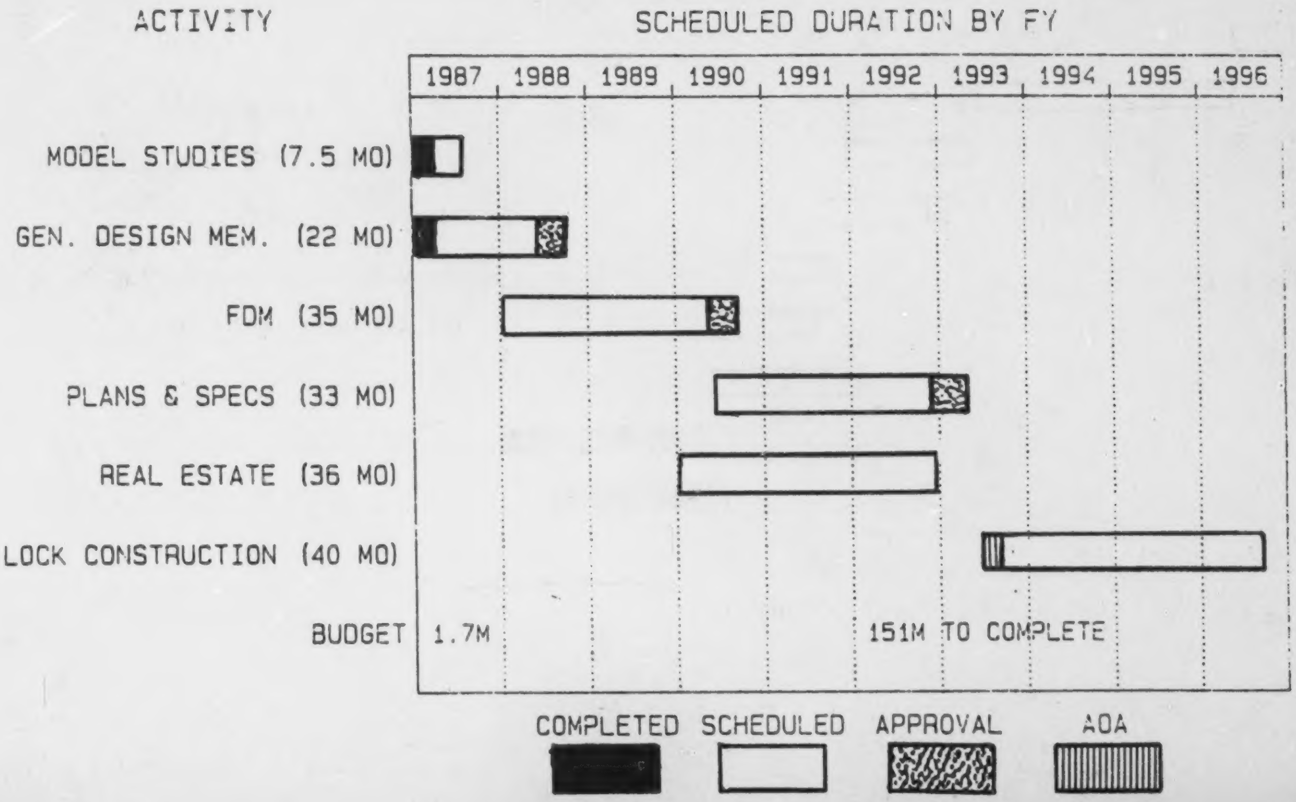
PITTSBURGH DISTRICT
GRAYS LANDING L&D -PROJECT SCHEDULE



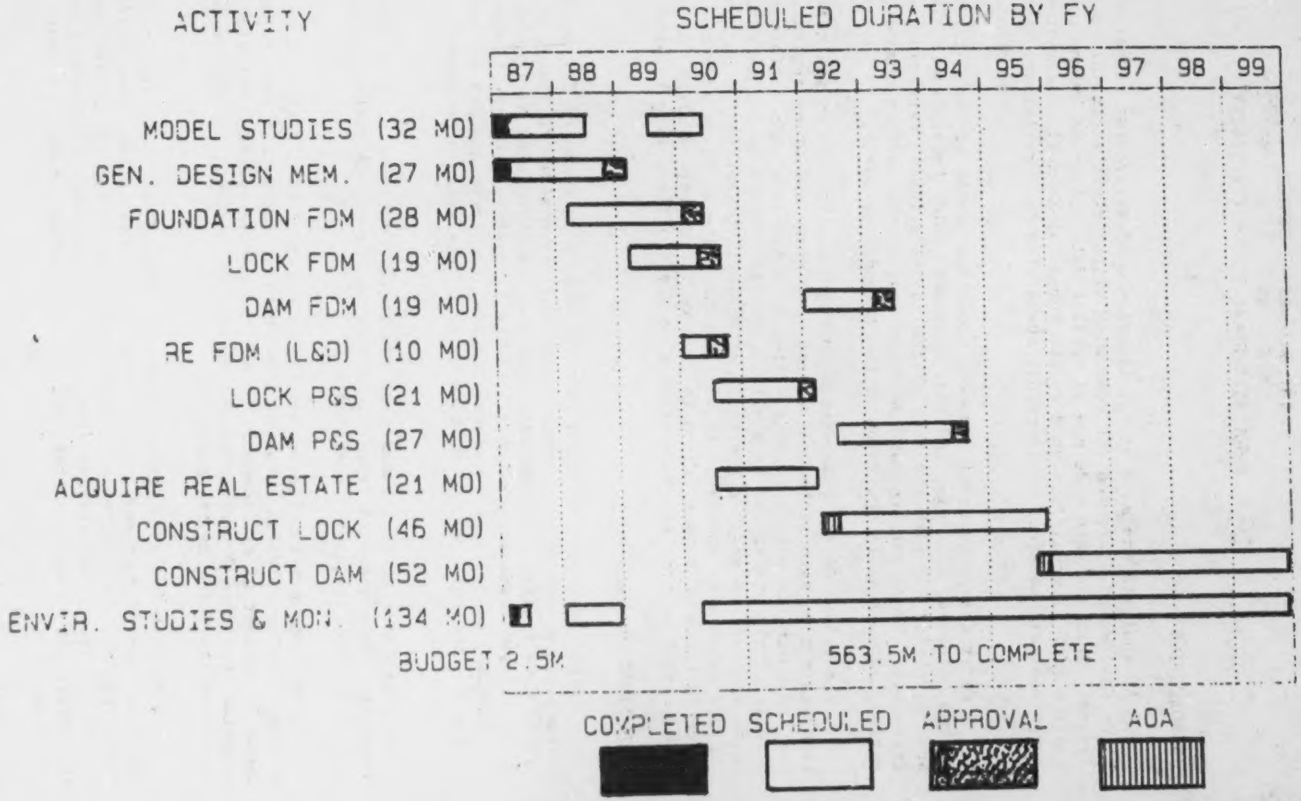
PITTSBURGH DISTRICT
POINT MARION LOCK - PROJECT SCHEDULE



HUNTINGTON DISTRICT
WINFIELD LOCK - PROJECT SCHEDULE



LOUISVILLE DISTRICT
OLMSTEAD LOCKS & DAM - PROJECT SCHEDULE



THE OHIO RIVER SYSTEM
AND
ASSOCIATED STATE ECONOMIC ACTIVITY

INTRODUCTION

An analysis was made of the importance of waterborne commerce using the Ohio River Navigation System on the economies of the eight states directly served by the System. This analysis made use of traffic data collected by the Corps of Engineers and the RIMS II model developed by the Bureau of Economic Analysis of the U.S. Department of Commerce. This report summarizes the preliminary results of that study.

First the patterns of commerce among the states of the Ohio River Navigation System (Alabama, Illinois, Indiana, Kentucky, Ohio, Pennsylvania, Tennessee, and West Virginia) and with the rest of the nation's inland waterway system are presented. These patterns are shown in tons of the various commodity groups moving, as well as in the value of the commodities moving.

The values of the commodities moving among the states indicate the economic linkages within each state and between each state and other regions. The values of traffic movements within a given state; from points within a state to all points outside of the state; and from all 11 external points to points within each given state are used to measure the scale of economic importance of the waterway to various sectors of economic activity in the states. These economic indicators are given in terms of output, which is a proxy for sales; earnings for workers within each related sector; and jobs related to the traffic moving by water.

WATERBORNE COMMERCE

Traffic data was obtained from the U.S. Army Corps of Engineers for movements, by each of nine commodity groups, from state to state, for the year 1984. This traffic data was available for the Ohio River Navigation System as a whole and for movement through all of the navigation projects (locks and dams) with the System. In addition to annual tonnage, the Corps applied per ton commodity values for the same year to provide value of the waterborne commerce moving among the states.

Appendix 1 gives a summary of the traffic data for each of eight states of interest. More detailed tabulations showing the actual state-to-state flows of tons and value are given as Appendix 2.

Coal accounts for 122.5 tons (or 61 percent) of 202 million tons which moves on the Ohio River System. However, in terms of value this coal represents only about 27 percent of all commodities shipped on the system. Petroleum fuels, which comprise less than 7 percent of system tonnage, account for almost 22 percent of the commodity value of the system.

Note that for each state the annual tonnage and value is given for each of the nine commodity groups. The movements are broken down into: traffic with both its origin and destination within the state (Intra-State); traffic with its origin within the state, but its destination in another state (Outbound); and traffic with its origin within another state and its destination within the state of interest (Inbound).

The magnitude of waterborne commerce on the Ohio River Navigation System is outlined in the appendices. The total annual tonnage was more than 200 million tons, while the total value of commodities moved was nearly $16 billion in 1984. Among the states of interest, Kentucky waterborne commerce of more than 70 million tons had the greatest value totalling more than $4.9 billion. The single greatest movement among the states and commodity groups was the 29.5 million tons of coal outbound from the state of West Virginia.

ECONOMIC INDICATORS

By making use of the RIMS II (Regional Interindustry Multiplier System) developed by the Bureau of Economic Analysis of the U.S. Department of Commerce, it is possible to translate waterborne commerce into measures of associated economic activity. The basic information needed, in addition to the traffic (and value) patterns given above, is a set of inter-industry multipliers, for output, earnings, and employment, for each of the eight states. These tables were produced by the BEA's RIMS II system were obtained, in machine readable form, for each of the states in the Basin. Multipliers were provided for the direct output effects, total output effects, earnings effects, and employment effects, for each of 39 industrial sectors.

In order to apply the RIMS II models for each state, the three types of traffic must be treated separately. For Intra-State traffic, the value of the traffic for each of the nine commodity groups was multiplied by Direct Effects multipliers to obtain the direct effects on each of 39 economic sectors due to the intra-state movement of commodities.

For Outbound Traffic, the values for each commodity were multiplied by the Total Effects multipliers, inasmuch as this type of traffic represents exports.

The treatment of Inbound Traffic is more complicated since that type of traffic is actually a factor of production of another commodity, rather than a direct indication of production. Using the 1977 National Input-Output table, each inbound commodity was converted into a level of production within the state. For example, inbound coal was converted into the appropriate value of electricity which is produced from the coal. The values of intermediate production were then applied to the Direct Effects multipliers to derive the value of output for all economic sectors associated with that intermediate production.

Factors were also included in the RIMS II tables by which associated earnings and jobs could be derived for the combination of Intra-State, Outbound, and Inbound commodity value.

The results of this analysis is given in Appendix 3. It is notable that the output and earnings associated with the traffic is in the billions of dollars annually, and jobs are in the tens of thousands. Kentucky was the largest degree of associated economic activity, with $4.735 billion in total output, $1.496 billion in earnings, and 78,801 jobs directly and indirectly associated with the traffic moving within, from, and to the Commonwealth of Kentucky.

As would be expected, coal mining is the economic sector with the greatest degree of the relationship with waterborne commerce. More than 1.2 billion in output, $430 million in earnings, and 12,000 jobs in the coal mining sector of Kentucky are directly or indirectly related to traffic moving on the river system.

Also included in this analysis, as Appendix 4, is a profile of traffic moving through 17 Ohio River System locks and dams identified by the National Waterways Study as candidates for replacement or major rehabilitation by the turn of the century.

CONCLUSION

The annual volume of waterborne traffic provides the means for estimating the economic importance to each directly and indirectly associated economic sector. Coupled with the RIMS II inter-industry modeling system, measures of associated output, earnings, and jobs, within economic sectors, have been derived. These estimates indicate the importance of the Ohio River Basin's waterborne commerce, and navigation system, to the economies of each state.

APPENDIX 1

ALABAMA

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

	TONNAGE (1000)			VALUE ($000)		
COMMODITY	INTRA-STATE	OUT-BOUND	IN-BOUND	INTRA-STATE	OUT-BOUND	IN-BOUND
1 COAL AND COKE	12.7	171.7	9388.0	445.5	6036.2	330083.6
2 PETROLEUM FUELS	1.2	22.6	163.0	201.4	5035.7	42888.4
3 CRUDE PETROLEUM	.0	.0	.0	.0	.0	.0
4 AGGREGATES	135.3	507.4	107.0	1313.6	4924.3	1036.2
5 GRAINS	85.4	286.4	2010.7	12619.8	37456.6	255296.5
6 CHEMICALS	20.3	437.9	624.6	4547.6	79506.8	127186.9
7 ORES / MINERALS	.0	16.7	165.9	.0	1656.3	9182.2
8 IRON AND STEEL	.0	232.0	120.7	.0	49177.3	61314.3
9 MISCELLANEOUS	147.4	518.1	161.2	23247.2	81689.5	21810.2
TOTALS	402.3	2192.8	12741.1	42375.0	265482.7	848798.3

KENTUCKY

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

COMMODITY	TONNAGE (1000) INTRA-STATE	OUT-BOUND	IN-BOUND	VALUE ($000) INTRA-STATE	OUT-BOUND	IN-BOUND
1 COAL AND COKE	7534.3	28014.8	6077.7	264907.6	985001.1	213690.2
2 PETROLEUM FUELS	277.6	616.0	5085.8	74197.9	142099.2	1299398.3
3 CRUDE PETROLEUM	1.9	1.3	662.6	383.6	267.6	131648.1
4 AGGREGATES	3668.2	8665.8	70.8	31417.5	81165.6	685.2
5 GRAINS	7.7	1702.3	40.2	1090.8	211860.6	5470.5
6 CHEMICALS	132.9	492.6	2817.6	36142.1	116726.7	597465.7
7 ORES / MINERALS	1.6	20.2	371.9	87.3	1635.3	20366.1
8 IRON AND STEEL	1.2	425.9	452.4	576.9	150229.9	200004.6
9 MISCELLANEOUS	450.8	1611.0	824.3	66309.8	233718.8	110899.3
TOTALS	12076.3	41550.1	16403.3	475113.6	1922704.8	2579628.0

ILLINOIS

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

COMMODITY	TONNAGE (1000) INTRA-STATE	TONNAGE (1000) OUT-BOUND	TONNAGE (1000) IN-BOUND	VALUE ($000) INTRA-STATE	VALUE ($000) OUT-BOUND	VALUE ($000) IN-BOUND
1 COAL AND COKE	81.2	7160.9	4413.9	2854.1	251777.9	155193.2
2 PETROLEUM FUELS	42.9	688.1	263.8	9219.9	166649.6	72686.9
3 CRUDE PETROLEUM	.0	8.5	7.5	.0	1682.1	1489.8
4 AGGREGATES	1324.8	67.0	22.1	12863.6	649.9	185.4
5 GRAINS	108.3	3003.3	73.4	18890.0	383661.5	13880.5
6 CHEMICALS	3.1	459.5	221.7	691.5	100062.1	44373.6
7 ORES / MINERALS	.0	9.8	84.6	.0	573.0	6332.2
8 IRON AND STEEL	1.8	87.9	331.8	142.4	42944.4	99770.9
9 MISCELLANEOUS	104.4	1512.2	144.3	6487.5	158728.9	18469.3
TOTALS	1666.5	12997.2	5563.0	51149.0	1106729.3	412382.0

INDIANA

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

COMMODITY	TONNAGE (1000) INTRA-STATE	TONNAGE (1000) OUT-BOUND	TONNAGE (1000) IN-BOUND	VALUE ($000) INTRA-STATE	VALUE ($000) OUT-BOUND	VALUE ($000) IN-BOUND
1 COAL AND COKE	2951.7	7122.6	6740.1	103783.2	250430.1	236982.7
2 PETROLEUM FUELS	111.5	1239.5	638.5	29547.5	314493.3	167057.1
3 CRUDE PETROLEUM	.0	.0	7.2	.0	.0	1427.6
4 AGGREGATES	171.7	840.4	331.9	1667.5	8047.3	3046.3
5 GRAINS	1.5	2093.5	109.4	139.1	279308.6	10951.9
6 CHEMICALS	.0	70.6	1334.2	.0	15329.7	295648.3
7 ORES / MINERALS	.0	7.7	168.1	.0	553.0	9949.8
8 IRON AND STEEL	13.7	269.4	148.7	6841.8	97310.4	63019.8
9 MISCELLANEOUS	7.4	147.7	195.8	1162.2	22778.0	30547.7
TOTALS	3257.5	11791.4	9673.9	143141.3	988250.5	818631.1

OHIO

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

	TONNAGE (1000)			VALUE ($000)		
COMMODITY	INTRA-STATE	OUT-BOUND	IN-BOUND	INTRA-STATE	OUT-BOUND	IN-BOUND
1 COAL AND COKE	5220.9	7694.9	12986.7	183566.3	270552.6	456610.9
2 PETROLEUM FUELS	91.4	1549.6	1517.8	18285.9	387051.6	394444.7
3 CRUDE PETROLEUM	.0	591.1	.0	.0	117434.6	.0
4 AGGREGATES	493.1	2136.2	633.7	4787.5	20739.8	5628.6
5 GRAINS	.0	1705.8	35.8	.0	246488.2	4716.7
6 CHEMICALS	33.9	204.9	3316.6	6441.6	49288.0	712743.2
7 ORES / MINERALS	.0	19.9	1091.2	.0	1734.0	72325.7
8 IRON AND STEEL	3.7	546.2	1240.3	2628.6	248188.2	481714.4
9 MISCELLANEOUS	9.6	380.8	1349.4	1470.9	57960.2	190029.8
TOTALS	5852.6	14829.4	22171.4	217180.9	1399437.3	2318214.0

PENNSYLVANIA

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

	TONNAGE (1000)			VALUE ($000)		
COMMODITY	INTRA-STATE	OUT-BOUND	IN-BOUND	INTRA-STATE	OUT-BOUND	IN-BOUND
1 COAL AND COKE	10667.1	3790.0	16107.9	375054.8	133255.1	566352.6
2 PETROLEUM FUELS	234.6	388.8	1915.4	53069.2	95343.6	517965.0
3 CRUDE PETROLEUM	.0	56.3	11.5	.0	11193.5	2277.4
4 AGGREGATES	3207.3	98.6	1363.9	30991.2	957.9	11898.8
5 GRAINS	.0	1.4	43.8	.0	188.0	5827.6
6 CHEMICALS	1.4	372.0	798.0	320.0	102822.9	174472.7
7 ORES / MINERALS	.0	13.0	346.5	.0	1358.4	22385.9
8 IRON AND STEEL	10.5	930.2	691.7	3450.9	369440.7	358870.6
9 MISCELLANEOUS	2.7	422.2	1088.2	427.3	64360.6	165178.8
TOTALS	14123.6	6072.5	22366.9	463313.4	778920.6	1825229.3

TENNESSEE

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

	TONNAGE (1000)			VALUE ($000)		
COMMODITY	INTRA-STATE	OUT-BOUND	IN-BOUND	INTRA-STATE	OUT-BOUND	IN-BOUND
1 COAL AND COKE	113.1	1877.3	10684.7	3975.9	66005.7	375674.9
2 PETROLEUM FUELS	183.5	145.9	385.4	48450.5	34318.5	95378.6
3 CRUDE PETROLEUM	.0	.0	.0	.0	.0	.0
4 AGGREGATES	1205.3	150.8	1992.4	9593.1	1409.6	19135.5
5 GRAINS	35.7	493.0	1844.6	4187.3	68612.8	206827.7
6 CHEMICALS	1.2	129.4	783.0	130.2	25685.1	165511.7
7 ORES / MINERALS	72.2	95.8	553.7	15745.5	16163.7	51581.6
8 IRON AND STEEL	1.4	244.3	539.3	700.9	54678.3	278190.7
9 MISCELLANEOUS	159.2	153.9	1680.2	25020.1	23758.7	197190.8
TOTALS	1771.6	3290.4	18463.3	107803.6	290632.4	1389491.5

WEST VIRGINIA

OHIO RIVER BASIN WATERWAY

SUMMARY OF TRAFFIC AND VALUE OF COMMERCE-1984

	TONNAGE (1000)			VALUE ($000)		
COMMODITY	INTRA-STATE	OUT-BOUND	IN-BOUND	INTRA-STATE	OUT-BOUND	IN-BOUND
1 COAL AND COKE	10545.7	29502.0	1770.4	370786.2	1037290.1	62247.5
2 PETROLEUM FUELS	871.5	5485.2	1265.3	232175.0	1446316.2	299821.3
3 CRUDE PETROLEUM	4.2	83.8	59.5	834.4	16652.3	11816.1
4 AGGREGATES	308.5	665.5	2989.5	2992.3	5231.5	28240.4
5 GRAINS	.0	4.2	.0	.0	566.1	.0
6 CHEMICALS	1120.0	292.2	1308.9	253019.7	54660.8	295328.4
7 ORES / MINERALS	.0	1.4	198.4	.0	100.8	11932.6
8 IRON AND STEEL	14.3	118.0	98.5	1111.4	58240.6	11246.2
9 MISCELLANEOUS	52.5	149.4	481.4	8271.7	23216.4	74542.7
TOTALS	12916.6	36301.8	8172.0	869190.8	2642274.9	795175.2

APPENDIX 2

OHIO RIVER BASIN WATERWAY

1984 STATE TO STATE FLOWS OF WATERBORNE TRAFFIC

(TONS)

Shipping State

		ALABAMA	KENTUCKY	ILLINOIS	INDIANA	OHIO	PENN	TENN	WEST VIRGINIA	OTHER STATES	TOTALS
	1	12870	8695	0	0	28384	0	98283	8623	27734	184349
	2	1233	19876	0	0	0	0	2782	0	0	23873
	3	0	0	0	0	0	0	0	0	0	0
	4	135283	5736	0	0	2996	0	498973	0	1679	642667
AL	5	85401	0	0	0	0	0	103469	0	182899	371769
	6	20282	50051	58320	3236	55821	1216	51633	0	219620	458179
	7	0	0	1486	2984	12256	0	0	0	0	16726
	8	0	0	18210	0	123179	18308	1880	0	70670	232027
	9	147442	0	15585	0	1382	0	392185	0	108852	665548
TOTAL		402311	64380	91801	6220	223898	19524	1146946	8623	611554	2586136
	1	3444829	7634348	2711294	3837640	1828942	154117	8108833	179404	8184362	35549187
	2	0	277836	20381	18942	190257	56058	70539	141289	117583	893886
	3	0	1931	0	1347	0	0	0	0	0	3278
	4	5984	3668232	18240	330251	418834	31812	1487829	730898	5844217	12334077
KY	5	104888	7686	24110	0	0	8174	232718	0	1333105	1709881
	6	33203	132898	31015	19874	244783	63808	45623	5813	48704	625521
	7	0	1600	8581	0	0	7518	2800	0	1320	21819
	8	0	1168	38747	0	7066	40342	28845	1898	308886	427052
	9	1889	450787	33861	0	483664	699074	73207	148329	171245	2061816
TOTAL		3590253	12076264	2884009	4008854	2971346	1080904	10047594	1207731	15779422	53628377
	1	2280182	2819	81178	2561071	7500	13532	438652	0	1859282	7242094
	2	36516	340549	42845	214514	0	18810	9348	65707	2699	731087
	3	0	4158	0	0	0	0	0	4309	0	8467
	4	0	1696	1324780	0	45257	15336	1450	1552	1709	1391780
IL	5	885476	16034	108330	1825	1708	1710	223418	0	2083390	3111880
	6	20208	144233	3111	52124	162289	0	42883	36398	1400	462641
	7	0	0	0	1459	1881	4223	0	0	2408	9771
	8	15227	15231	1834	16707	2424	9178	23547	0	5583	89731
	9	88957	162664	104368	13897	195117	29528	537057	6599	472350	1616534
TOTAL		3108542	687384	1688544	2861297	419976	92314	1274266	116582	4438821	14863895
	1	106278	2850390	418008	2961741	3083	0	384843	11963	35[illegible]020	10074327
	2	20787	747735	219613	111527	49444	9244	9373	12840	170487	1351020
	3	0	0	0	0	0	0	0	0	0	0
	4	0	45708	0	171734	63385	0	3211	725310	2786	1012114
IN	5	111829	0	1307	1450	0	0	31611	0	1948638	2094835
	6	3447	1350	7652	0	1400	0	47981	0	8828	70638
	7	0	0	1490	0	3129	0	1525	0	1591	7735
	8	47805	1873	14811	13717	3006	26979	115658	2608	58740	283097
	9	1952	8947	20730	7371	1450	6592	45862	1400	59292	155097
TOTAL		291869	3457003	681612	3257540	124877	43215	620144	754321	5818382	15048863

	1	2365961	155606	72629	406888	5220885	3648608	432985	201350	398771	12918783
	2	0	646600	6028	14070	91370	25603	242664	614638	0	1640973
	3	0	576892	7499	0	0	3313	0	1400	0	591104
	4	0	0	0	0	493051	659631	0	1476378	0	2829260
OH	5	89640	10510	12155	1620	0	5171	41330	0	1568518	1705844
	6	3587	22790	9225	0	33935	0	18489	56280	94551	238857
	7	0	0	2807	1406	0	2893	1648	0	11110	19864
	8	1687	20192	134776	12576	3771	6296	118515	10975	241189	549906
	9	13317	56143	6121	4345	9608	48407	24933	11668	213850	390392
TOTAL		2454192	1502733	251440	442805	5852570	4400021	880584	2372889	2524969	20881963
	1	17886	2973	546910	0	1450129	10667089	63681	1367481	341303	14457052
	2	0	46117	1750	0	28753	234646	0	285968	26224	623482
	3	0	8624	0	0	0	0	0	49718	0	56342
	4	0	0	0	0	58644	3207309	0	40005	0	3305958
PA	5	0	0	0	0	0	0	0	0	1408	1408
	6	20078	5157	12003	0	118420	1600	0	55682	162739	373379
	7	0	0	1350	0	8604	0	0	0	2912	12956
	8	31871	132817	23654	51327	151298	10458	57787	3350	476393	840627
	9	11402	63547	0	26823	39863	2710	17659	70838	192214	474956
TOTAL		80937	257035	585667	78150	1653796	14123812	138902	1872842	1205197	20196140
	1	1005527	558	7092	0	3068	0	113061	1587	859484	1990377
	2	0	99123	0	27994	4326	4821	183547	1643	7959	329413
	3	0	0	0	0	0	0	0	0	0	0
	4	89408	9007	5833	0	2850	1454	1205294	15391	16611	1356048
TN	5	32518	3362	7062	0	0	0	35717	0	450060	528718
	6	0	39878	11201	1380	9917	1437	1200	3559	62067	130587
	7	0	0	2619	0	6044	1465	72171	15947	66569	168015
	8	250	6066	91666	1653	1712	26634	1418	0	115949	245749
	9	2436	6542	7139	30	11634	0	159176	1400	122542	313098
TOTAL		1140138	166484	133012	31057	42751	36011	1771605	39527	1701421	5062006
	1	113698	3245210	659779	130675	9857216	12291711	1180358	10845682	2023246	40047675
	2	1296	2589360	15998	305126	1105801	1741803	0	871507	222826	6386717
	3	0	72973	0	2696	0	8150	0	4200	0	88019
	4	0	0	0	0	11996	653520	0	308456	0	973972
WV	5	0	0	0	0	0	1400	0	0	2848	4248
	6	22684	11708	57743	6800	35776	43257	11211	1120005	106257	1413221
	7	0	0	0	1400	0	0	0	0	0	1400
	8	5055	1250	3542	0	21639	6666	29724	14311	50080	132267
	9	4602	35505	12129	0	16757	1316	15645	52462	61591	201807
TOTAL		147115	5956006	744191	448697	11081186	14747823	1236938	12916623	2469846	49718426
	1	54402	1400	0	1668	10357	0	1610	0	0	69417
	2	104481	698434	0	56889	139193	559068	50716	143261	0	1650040
O	3	0	0	0	3143	0	0	0	4049	0	7192
T	4	1600	8663	0	1651	29867	1985	2919	0	0	46605
H	5	1026475	10286	28763	106320	34129	27367	1212560	0	1348	2447268
E	6	621371	2542460	41510	1249233	2690144	688312	585181	1161284	0	9449495
R	7	165919	371882	86048	180813	1056351	330357	547700	182478	0	2881549
	8	19116	275205	6325	68471	930011	557127	163891	79383	2507	2099738
	9	36729	465932	48937	150686	693310	302674	573869	239123	50676	2461936
TOTAL		1930095	4792262	191603	1796854	6483432	2487090	3117944	1799578	64531	21133440

	1	9400713	13611997	4495088	9591883	18207544	26774957	10797806	12318090	17234182	127530241
	2	164282	5363432	306695	750082	1809144	2150054	568947	2136853	850782	13800251
T	3	0	664578	7499	7186	0	11463	0	83676	0	784402
O	4	242285	3739042	1348853	503636	1126780	4571247	3197676	3297990	5887202	23892881
T	5	2096128	47878	181747	110815	35837	43822	1880323	0	7579214	11978782
A	6	844838	2950473	224780	1334247	3350485	799430	784181	2428918	704186	13221618
L	7	165918	373482	84581	188082	1081155	348458	625844	198426	86910	3139835
	8	120713	453602	333685	182451	1244053	702187	540721	112625	1329977	6000194
	9	308505	1275047	248670	203182	1358985	1090896	1839393	533619	1452712	8311782
	TOTAL	13143452	28478531	7229579	12831474	28023983	38480514	20234891	21088597	34804145	203226188

OHIO RIVER BASIN WATERWAY

1984 STATE TO STATE FLOWS OF WATERBORNE TRAFFIC

($ THOUSANDS)

Shipping State

		ALABAMA	KENTUCKY	ILLINOIS	INDIANA	OHIO	PENN	TENN	WEST VIRGINIA	OTHER STATES	TOTALS
	1	445.6	306.7	0	0	997.3	0	3454.9	303.2	975.1	8481.7
	2	201.4	4442.7	.0	0	0	0	593.0	0	0	5237.1
	3	.0	.0	0	0	0	0	.0	0	.0	.0
	4	1313.6	53.3	0	0	29.1	0	4825.6	0	16.3	6237.9
AL	5	12619.8	.0	0	0	0	0	12906.7	0	24549.9	50076.4
	6	4947.6	10117.0	9755.6	478.3	9474.9	132.0	11059.0	0	38469.1	84054.4
	7	.0	.0	122.9	651.0	882.3	0	.0	.0	.0	1856.3
	8	.0	.0	4489.7	.0	8173.1	15379.7	66.8	.0	21086.1	49177.3
	9	23247.2	.0	2457.3	0	217.9	0	61835.8	.0	17178.5	104936.8
	TOTAL	42375.0	14918.7	16805.5	1130.3	18774.5	15511.6	84743.8	303.2	102794.9	307857.7
	1	121109.6	264907.6	95329.1	127899.4	57203.3	5418.8	285026.7	8307.8	286707.4	1249808.7
	2	.0	74187.8	6784.7	4706.3	43617.2	18762.3	11527.6	28233.6	30492.3	216297.1
	3	.0	38[illegible].6	0	267.6	0	0	0	.0	0	851.2
	4	55.4	3141[illegible].5	149.0	3030.3	3603.8	294.7	14236.3	8437.2	53448.9	112583.0
KY	5	13631.2	109[illegible].8	4349.4	0	0	1089.2	25403.6	.0	167487.0	212951.4
	6	3760.0	3614[illegible].1	4679.1	2136.0	75703.6	16202.4	5172.2	1480.7	7753.6	157888.9
	7	.0	8[illegible].3	709.8	.0	0	621.9	231.6	0	72.0	1722.6
	8	0	57[illegible].9	11737.6	.0	5242.2	22773.1	14039.1	320.6	96117.2	150806.8
	9	294.7	66309.8	5307.3	0	59318.0	107650.[illegible]	11056.0	23281.5	26800.5	300028.6
	TOTAL	138741.0	47611[illegible].6	128926.1	138036.7	244888.1	172733.3	396637.1	64061.6	668878.9	2397818.3

Receiving State

	1	80170.5	85.1	2854.1	90047.3	263.7	475.8	15348.2	.0	65372.4	254632.0
	2	5864.7	86012.7	9219.9	57830.3	.0	3603.0	1527.0	10875.4	578.4	175869.5
	3	.0	821.1	.0	.0	.0	.0	.0	856.1	.0	1682.1
	4	.0	11.5	12863.8	.0	439.4	148.9	14.1	15.1	15.9	13513.5
IL	5	65696.2	1680.7	18890.0	146.3	226.9	227.1	24808.0	.0	289876.3	402551.5
	6	4661.4	32049.5	691.5	11547.5	33263.8	.0	8531.2	8888.7	320.0	100753.5
	7	.0	.0	.0	79.6	91.7	270.4	.0	.0	131.3	573.0
	8	7896.3	8194.6	142.4	8510.5	2330.1	712.8	12413.8	.0	2886.2	43086.8
	9	10491.9	16702.8	6487.5	1986.3	28515.3	4551.3	58727.3	1198.4	37534.5	165216.4
	TOTAL	188081.0	145584.1	51149.0	170227.7	66131.0	10235.3	120370.5	21883.6	376516.1	1157878.3
	1	3736.7	83187.7	14626.9	103783.2	108.4	.0	12827.9	420.6	125521.9	354213.3
	2	7134.4	186471.1	60795.7	29547.5	8485.8	2355.0	1742.8	2253.5	36270.3	344040.8
	3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4	.0	442.8	.0	1667.5	809.9	.0	31.2	6935.3	27.1	9714.8
IN	5	17440.7	.0	261.2	139.1	.0	.0	3722.2	.0	257884.5	279447.7
	6	510.5	146.5	1749.1	.0	320.0	.0	10585.6	.0	2017.9	15329.7
	7	.0	.0	81.3	.0	258.8	.0	126.1	.0	86.8	553.0
	8	23199.0	904.3	1150.2	6841.8	2498.9	2095.2	57729.7	218.1	9515.0	104152.2
	9	307.9	1568.3	2888.9	1162.2	224.6	1102.4	7246.8	220.7	9214.1	23940.1
	TOTAL	52328.3	281728.8	81553.3	143141.3	12490.4	5552.6	94012.2	10048.3	440537.5	1131391.8
	1	83187.2	5822.7	2560.7	14376.5	183568.3	128281.5	15223.8	7079.5	14020.8	454118.9
	2	.0	159985.3	984.7	3170.4	18285.9	6338.9	68585.3	147986.9	.0	405337.5
	3	.0	115008.5	1489.8	.0	.0	658.2	.0	278.1	.0	117434.5
	4	.0	.0	.0	.0	4787.5	6407.0	.0	14332.9	.0	25527.3
OH	5	7977.9	2100.6	2429.4	146.0	.0	689.5	6912.6	.0	226232.1	246488.2
	6	815.3	3782.8	2092.1	.0	6441.6	.0	4226.2	14594.7	23677.1	55729.5
	7	.0	.0	202.1	101.2	.0	239.3	359.5	.0	831.9	1734.0
	8	846.5	11500.2	55778.8	5808.3	2628.6	3373.9	62791.2	853.3	107237.1	250816.8
	9	2089.7	9051.2	965.1	685.1	1470.9	7123.9	3931.2	1839.7	32264.4	59431.2
	TOTAL	95026.6	307251.1	66502.7	24287.6	217180.5	153112.2	162029.8	186964.1	404263.3	1616618.1
	1	618.3	104.5	19229.4	.0	50986.5	375054.8	2235.5	48080.6	12000.2	508309.9
	2	.0	7806.2	375.7	.0	5550.5	53069.2	.0	73559.5	7951.8	148412.8
	3	.0	1316.0	.0	.0	.0	.0	.0	9877.5	.0	11193.5
	4	.0	.0	.0	.0	569.4	30991.2	.0	388.4	.0	31949.0
PA	5	.0	.0	.0	.0	.0	.0	.0	.0	188.0	188.0
	6	4940.4	1213.7	3730.4	.0	29868.3	320.0	.0	18855.9	44214.2	103142.9
	7	.0	.0	87.2	.0	625.9	.0	.0	.0	635.3	1358.4
	8	14754.3	63178.7	12552.8	23892.9	69186.0	3450.9	28334.9	2250.1	155290.8	372891.6
	9	1787.8	9915.6	.0	4229.2	6149.5	427.3	2667.4	10131.3	29465.5	64787.9
	TOTAL	22110.8	83638.7	35985.5	28122.1	162936.2	463313.4	33237.9	163143.3	249746.2	1242234.0
	1	35354.3	19.6	249.4	.0	107.9	.0	3875.9	55.8	30218.8	69881.7
	2	.0	23891.0	.0	6191.5	828.7	1442.5	48450.5	564.7	1300.1	82769.0
	3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4	965.3	87.5	36.5	.0	27.7	9.1	9593.1	131.5	152.2	11002.7
TN	5	4550.5	323.0	1411.5	.0	.0	.0	4187.3	.0	62327.7	72800.1
	6	.0	8748.4	2235.8	315.4	1411.1	319.4	130.2	793.5	11861.4	25815.3
	7	.0	.0	202.9	.0	651.1	121.2	15745.5	869.7	14318.7	31909.2
	8	49.2	471.1	7636.6	128.4	1645.7	3318.3	700.9	.0	41429.0	55379.2
	9	383.9	1346.6	1022.1	4.7	1649.2	.0	25020.1	220.7	18131.2	47778.6
	TOTAL	41303.3	34887.4	12784.8	6640.1	6421.3	5210.5	107803.6	2836.0	180739.1	398436.0

	1	3994.1	114101.8	23197.8	4601.6	346579.7	432176.6	41501.4	370786.2	71137.3	1408076.3
	2	445.4	677579.0	3766.2	82538.6	292953.7	325537.2	.0	232175.0	63496.0	1678491.3
	3	.0	14497.5	.0	535.6	.0	1619.2	.0	834.4	.0	17486.7
	4	.0	.0	.0	.0	116.5	5115.1	.0	2992.3	.0	8223.9
WV	5	.0	.0	.0	.0	.0	186.9	.0	.0	379.2	566.1
	6	4770.8	2533.0	11241.8	933.3	3830.7	6268.3	2231.5	253019.7	22751.5	307680.5
	7	.0	.0	.0	100.8	.0	.0	.0	.0	.0	100.8
	8	2556.9	592.9	3015.3	.0	11102.7	2609.2	14223.0	1111.4	24140.5	59352.0
	9	709.8	5598.1	1912.4	.0	2957.4	207.5	2466.7	8271.7	9364.5	31488.1
	TOTAL	12477.1	814802.1	43133.5	88709.9	657640.7	773719.9	60472.6	869190.8	191269.1	3511465.6
	1	1912.8	49.2	.0	57.9	364.2	.0	56.6	.0	.0	2440.7
	2	29343.9	144104.3	.0	12519.8	42928.8	159720.0	11408.2	38397.6	.0	438422.5
O	3	.0	.0	.0	624.4	.0	.0	.0	804.4	.0	1428.8
T	4	15.5	84.1	.0	16.0	232.7	14.0	28.3	.0	.0	390.6
H	5	124899.8	1366.2	5428.9	10859.5	4489.8	3634.9	133074.6	.0	179.0	283732.8
E	6	107638.5	538874.9	8989.5	280237.7	558770.8	151550.6	122756.0	250914.9	.0	2019733.0
R	7	9182.2	20368.1	4916.0	9017.2	69815.9	21133.1	50664.3	11062.8	.0	196357.6
	8	12012.1	115162.8	3429.9	24879.7	381535.6	308608.4	88590.2	7805.1	1309.2	942937.9
	9	5724.5	66711.4	3916.2	23662.4	89993.9	44492.8	51259.5	37650.4	7062.7	330473.5
	TOTAL	290729.3	888719.0	26680.6	381474.8	1148131.7	689153.9	458037.7	346435.2	8550.4	4215917.6
	1	330529.1	478597.8	158047.3	340785.9	640177.2	941407.5	379650.9	433033.7	605953.8	4308163.3
	2	43089.9	1373596.2	81906.8	195804.5	412730.7	571034.1	143829.1	531896.3	140090.0	3494877.6
T	3	.0	132031.7	1489.8	1427.6	.0	2277.4	.0	12850.5	.0	149877.0
O	4	2349.8	32102.7	13049.0	4713.8	10416.1	42890.0	28728.5	31232.8	53680.3	219143.0
T	5	287916.3	6581.3	32770.5	11091.0	4716.7	5827.6	211015.0	.0	1008903.7	1568802.0
A	6	131734.4	633607.9	46085.0	295648.3	719184.8	174792.7	185841.0	548348.1	151084.8	2865107.8
L	7	9182.2	20453.3	6332.2	9949.8	72325.7	22385.9	67327.2	11932.6	18076.0	235964.9
	8	61314.3	200581.5	99913.4	69861.6	484343.0	362321.5	278881.6	12357.6	459011.2	2028585.7
	9	45057.4	177209.1	24956.8	31700.9	191500.8	165606.1	222210.9	82814.4	188015.7	1129081.2
	TOTAL	891173.3	3054741.5	463530.9	951772.4	2535394.8	2288542.7	1497295.1	1864385.9	2822795.6	15979812.4

APPENDIX 3

MEASURES OF ECONOMIC ACTIVITY ASSOCIATED "'TH OHIO RIVER SYSTEM WATERBORNE COMMERCE -- 19"4

ALA‿AMA

AFFECTED ECONOMIC SECTORS	$ SALES EFFECTS	$ EARNINGS	JOBS
1 Agricultural Products & Services	98,116,542	29,703,883	4,549
2 Coal & Miscellaneous Mining	127,968,474	28,422,753	863
3 Chem, Pet Ref, Crude, N Gas	149,195,913	31,258,027	1,030
4 Primary Metals	113,347,600	33,626,049	1,163
5 General Manufacturing	167,949,505	58,941,325	3,452
6 Elect, Gas, Water, Sanitation	191,214,616	65,923,058	2,077
7 Transportation	54,814,879	20,167,897	916
8 Construction, Maint, Repair	65,498,061	20,234,866	1,256
9 Business Services	216,852,205	107,459,012	7,947
TOTAL	1,184,557,795	395,736,870	23,253

ILLIN‿.S

$ SALES EFFECTS	$ EARNINGS	JOBS
436,954,522	92,676,528	8,898
354,545,509	104,876,762	2,666
412,061,863	50,464,045	1,542
156,870,894	30,699,625	998
336,252,808	114,564,556	5,043
132,352,159	30,923,324	813
90,310,945	36,833,443	1,424
62,715,706	24,154,173	1,008
604,839,517	215,775,271	13,448
2,586,903,923	700,787,725	35,838

INDIANA

AFFECTED ECONOMIC SECTORS	$ SALES EFFECTS	$ EARNINGS	JOBS
1 Agricultural Products & Services	331,600,016	72,439,113	10,882
2 Coal & Miscellaneous Mining	391,505,902	128,329,571	3,304
3 Chem, Pet Ref, Crude, N Gas	456,745,552	52,277,054	1,495
4 Primary Metals	169,230,146	48,805,401	1,469
5 General Manufacturing	212,782,564	62,899,846	2,714
6 Elect, Gas, Water, Sanitation	177,725,759	53,288,155	1,631
7 Transportation	75,222,827	32,899,897	1,419
8 Construction, Maint, Repair	70,367,667	20,492,336	1,077
9 Business Services	411,623,835	166,072,497	12,779
TOTAL	2,297,004,266	640,403,870	36,570

KENTUCKY

$ SALES EFFECTS	$ EARNINGS	JOBS
278,917,496	75,154,589	9,043
1,330,776,225	462,554,439	14,036
582,511,070	67,501,758	2,556
366,271,947	89,625,724	2,873
646,117,959	181,047,288	9,811
255,840,483	58,898,356	1,947
154,599,100	75,072,996	3,695
100,873,953	54,546,733	3,094
1,019,258,017	413,729,745	31,742
4,735,168,250	1,498,129,628	78,797

AFFECTED ECONOMIC SECTORS	OHIO			PENNSYLVANIA		
	$ SALES EFFECTS	$ EARNINGS	JOBS	$ SALES EFFECTS	$ EARNINGS	JOBS
1 Agricultural Products & Services	290,761,657	78,374,145	10,147	14,635,570	7,348,072	1,091
2 Coal & Miscellaneous Mining	528,272,599	181,982,141	6,456	403,412,761	159,815,586	4,999
3 Chem, Pet Ref, Crude, N Gas	944,215,416	119,545,597	3,198	467,856,718	66,813,410	1,927
4 Primary Metals	579,334,528	204,924,398	5,990	570,402,439	157,991,474	4,779
5 General Manufacturing	505,444,399	144,866,622	6,684	382,368,213	119,400,321	5,673
6 Elect, Gas, Water, Sanitation	327,359,640	91,723,970	2,975	350,220,093	105,208,291	3,168
7 Transportation	157,163,187	72,386,367	2,975	130,972,470	64,027,585	2,856
8 Construction, Maint, Repair	135,088,343	63,671,872	3,018	129,788,276	54,298,406	2,614
9 Business Services	740,731,923	371,470,968	26,834	598,576,215	291,188,062	20,482
TOTAL	4,208,371,692	1,328,946,080	68,277	3,048,232,755	1,026,091,207	47,589

AFFECTED ECONOMIC SECTORS	TENNESSEE			WEST VIRGINIA		
	$ SALES EFFECTS	$ EARNINGS	JOBS	$ SALES EFFECTS	$ EARNINGS	JOBS
1 Agricultural Products & Services	120,408,667	34,905,152	6,974	11,908,819	10,377,403	2,134
2 Coal & Miscellaneous Mining	195,637,472	52,197,678	1,908	1,266,155,274	475,501,84C	13,259
3 Chem, Pet Ref, Crude, N Gas	133,208,247	27,324,503	885	2,464,272,607	288,228,955	8,058
4 Primary Metals	102,298,540	84,579,412	2,897	102,636,349	39,671,486	1,098
5 General Manufacturing	177,058,285	61,109,808	3,362	219,526,397	60,532,987	5,754
6 Elect, Gas, Water, Sanitation	77,516,197	71,388,991	2,473	200,551,283	31,391,146	1,028
7 Transportation	72,328,462	36,336,212	1,518	158,900,789	49,971,389	1,792
8 Construction, Maint, Repair	78,187,362	37,477,792	2,292	117,847,739	32,789,554	1,296
9 Business Services	294,175,828	161,126,535	11,363	714,435,025	279,563,459	17,527
TOTAL	1,250,819,060	566,446,083	33,672	5,256,234,282	1,268,028,219	51,946

APPENDIX 4

E N S W O R T H   L O C K   A N D   D A M

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

	ORIGIN				DESTINATION			
STATE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	16.5	.08	12583.4	.81	151.9	.77	22817.9	1.48
ARKANSAS	1.9	.01	243.3	.02	2.7	.01	976.3	.06
ILLINOIS	31.8	.16	1580.0	.10	568.5	2.88	28928.3	1.87
INDIANA	29.8	.15	2544.6	.16	62.6	.32	22218.9	1.44
IOWA	5.3	.03	724.4	.05	.0	.00	.0	.00
KENTUCKY	393.0	1.99	36871.2	2.38	179.1	.91	66139.7	4.28
LOUISIANA	997.7	5.05	209726.3	13.56	501.6	2.54	54990.5	3.56
MINNESOTA	1.5	.01	336.1	.02	.0	.00	.0	.00
MISSISSIPPI	32.1	.16	4883.3	.32	12.9	.07	4684.5	.30
MISSOURI	49.9	.25	7054.1	.46	51.8	.26	1821.9	.12
OHIO	869.1	4.40	29750.9	1.92	2036.7	10.31	158562.4	10.25
OKLAHOMA	6.8	.03	2348.9	.15	18.2	.09	8665.2	.56
PENNSYLVANIA	8211.6	41.58	670250.1	43.34	11221.6	56.81	885317.2	57.25
TENNESSEE	33.2	.17	3858.5	.25	960.7	4.86	43005.0	2.78
TEXAS	466.0	2.36	140310.0	9.07	208.8	1.06	48683.8	3.15
WEST VIRGINIA	8604.9	43.57	423417.9	27.38	3774.0	19.11	199631.5	12.91
TOTALS	19751.1	100.00	1546483.0	100.00	19751.1	100.00	1546483.0	100.00

DASHIELDS LOCK AND DAM

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

	ORIGIN				DESTINATION			
STATE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	16.5	.08	12563.4	.76	151.9	.74	22817.9	1.38
ARKANSAS	1.9	.01	243.3	.01	2.7	.01	976.3	.06
ILLINOIS	39.8	.19	2795.8	.17	579.8	2.83	32393.1	1.95
INDIANA	37.7	.18	4678.8	.28	75.2	.37	27655.4	1.67
IOWA	5.3	.03	724.4	.04	.0	.00	.0	.00
KENTUCKY	396.1	1.93	36890.2	2.22	185.1	.90	68700.1	4.14
LOUISIANA	1215.6	5.92	255929.3	15.42	502.2	2.45	55085.1	3.32
MINNESOTA	1.5	.01	336.1	.02	.0	.00	.0	.00
MISSISSIPPI	32.1	.16	4883.3	.29	12.9	.06	4684.5	.28
MISSOURI	49.9	.24	7054.1	.43	55.6	.27	3678.0	.22
OHIO	1028.9	5.01	31893.7	1.92	2044.2	9.96	159335.8	9.60
OKLAHOMA	6.8	.03	2348.9	.14	18.2	.09	8685.2	.52
PENNSYLVANIA	8145.2	39.69	630000.8	37.97	12111.4	59.02	1029478.9	62.04
TENNESSEE	33.2	.16	3858.5	.23	960.7	4.68	43005.0	2.59
TEXAS	543.6	2.65	155440.3	9.37	208.8	1.02	48683.8	2.93
WEST VIRGINIA	8968.1	43.70	509732.5	30.72	3613.4	17.61	154194.2	9.29
TOTALS	20522.0	100.00	1659373.4	100.00	20522.0	100.00	1659373.4	100.00

MONTGOMERY LOCK AND DAM

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

STATE	ORIGIN TONNAGE (1000)	ORIGIN PERCENT TOTAL TONNAGE	ORIGIN VALUE ($000)	ORIGIN PERCENT TOTAL VALUE	DESTINATION TONNAGE (1000)	DESTINATION PERCENT TOTAL TONNAGE	DESTINATION VALUE ($000)	DESTINATION PERCENT TOTAL VALUE
ALABAMA	18.1	.08	14117.8	.67	160.9	.75	24921.0	1.19
ARKANSAS	1.9	.01	243.3	.01	8.5	.04	4139.6	.20
ILLINOIS	81.2	.38	8486.9	.40	582.9	2.71	33263.4	1.59
INDIANA	43.2	.20	5552.6	.26	78.1	.36	28122.1	1.34
IOWA	5.3	.02	724.4	.03	.0	.00	.0	.00
KENTUCKY	738.5	3.44	107188.5	5.11	270.7	1.26	84118.3	4.01
LOUISIANA	1335.0	6.21	301499.7	14.38	680.8	3.17	97699.3	4.66
MINNESOTA	1.5	.01	338.1	.02	.0	.00	.0	.00
MISSISSIPPI	33.6	.16	5232.2	.25	46.1	.21	20229.0	.96
MISSOURI	61.5	.29	8665.1	.41	56.4	.26	4169.1	.20
OHIO	1169.5	5.44	39463.9	1.88	2078.1	9.67	167582.3	7.99
OKLAHOMA	6.8	.03	2348.9	.11	40.8	.19	20306.6	.97
PENNSYLVANIA	7054.8	32.82	746374.2	35.59	12379.2	57.59	1271441.4	60.62
TENNESSEE	33.2	.15	3858.5	.18	1002.8	4.66	63605.2	3.03
TEXAS	792.5	3.69	215309.8	10.27	370.5	1.72	101320.1	4.83
WEST VIRGINIA	10119.0	47.07	637895.1	30.42	3739.7	17.40	176359.6	8.41
TOTALS	21495.5	100.00	2097297.1	100.00	21495.5	100.00	2097297.1	100.00

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OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

STATE	ORIGIN TONNAGE (1000)	ORIGIN PERCENT TOTAL TONNAGE	ORIGIN VALUE ($000)	ORIGIN PERCENT TOTAL VALUE	DESTINATION TONNAGE (1000)	DESTINATION PERCENT TOTAL TONNAGE	DESTINATION VALUE ($000)	DESTINATION PERCENT TOTAL VALUE
ALABAMA	197.7	.57	26690.8	.61	2529.7	7.35	116302.3	2.66
ARKANSAS	1.9	.01	243.3	.01	16.8	.05	7921.1	.18
FLORIDA	.0	.00	.0	.00	3.8	.01	698.8	.02
ILLINOIS	289.3	.84	37908.7	.87	806.7	2.34	108130.1	2.47
INDIANA	695.6	2.02	18579.7	.42	626.5	1.82	52834.2	1.21
IOWA	9.7	.03	1298.4	.03	56.6	.16	4970.2	.11
KENTUCKY	2939.4	8.54	291606.4	6.66	1408.9	4.09	280323.3	6.40
LOUISIANA	4060.5	11.79	1081593.0	24.69	912.9	2.65	130843.0	2.99
MINNESOTA	69.7	.20	16158.5	.37	19.7	.06	8584.2	.20
MISSISSIPPI	57.8	.17	9588.9	.22	112.5	.33	42739.7	.98
MISSOURI	390.7	1.13	56087.5	1.28	107.7	.31	26553.8	.61
NEBRASKA	.0	.00	.0	.00	10.9	.03	6057.2	.14
OHIO	7075.5	20.55	683614.3	15.61	8684.0	25.22	1009421.5	23.05
OKLAHOMA	6.8	.02	2348.9	.05	67.3	.20	34818.1	.79
PENNSYLVANIA	3073.6	8.93	520178.2	11.88	9458.2	27.47	1388651.7	31.70
TENNESSEE	94.4	.27	10418.4	.24	1298.8	3.77	151428.7	3.46
TEXAS	1637.1	4.76	409263.1	9.34	567.7	1.65	168767.2	3.85
WEST VIRGINIA	13828.9	40.17	1214511.6	27.73	7742.1	22.49	841043.7	19.20
TOTALS	34426.7	100.00	4380089.8	100.00	34428.7	100.00	4380089.8	100.00

MCALPINE LOCK AND DAM

STATE	ORIGIN TONNAGE (1000)	ORIGIN PERCENT TOTAL TONNAGE	ORIGIN VALUE ($000)	ORIGIN PERCENT TOTAL VALUE	DESTINATION TONNAGE (1000)	DESTINATION PERCENT TOTAL TONNAGE	DESTINATION VALUE ($000)	DESTINATION PERCENT TOTAL VALUE
ALABAMA	286.7	.66	41042.1	.74	2838.7	6.50	136214.0	2.47
ARKANSAS	56.6	.13	9812.0	.18	91.5	.21	26550.9	.48
FLORIDA	.0	.00	.0	.00	12.2	.03	1112.1	.02
ILLINOIS	1372.1	3.14	167418.6	3.04	2120.9	4.86	182249.4	3.31
INDIANA	4224.2	9.68	190325.1	3.45	5863.4	13.43	277868.4	5.04
IOWA	18.1	.04	3152.0	.06	115.1	.26	12277.8	.22
KENTUCKY	11450.3	26.23	662760.4	12.03	7984.0	18.29	1084126.7	19.67
LOUISIANA	7242.9	16.59	1617151.6	29.35	7719.6	17.68	631430.2	11.46
MINNESOTA	200.5	.46	43550.4	.79	179.4	.41	17437.4	.32
MISSISSIPPI	390.2	.89	69697.6	1.26	146.1	.33	48055.9	.87
MISSOURI	658.2	1.51	99297.1	1.80	574.0	1.31	73967.0	1.34
NEBRASKA	.0	.00	.0	.00	22.5	.05	11782.8	.21
OHIO	6675.0	15.29	874970.2	15.88	6842.9	15.67	1283847.3	23.30
OKLAHOMA	95.9	.22	17133.1	.31	121.3	.28	59977.9	1.09
PENNSYLVANIA	2065.0	4.73	355081.6	6.44	2681.3	6.14	740438.9	13.44
TENNESSEE	128.2	.29	16368.9	.30	2908.1	6.66	304872.8	5.53
TEXAS	2476.7	5.67	600606.4	10.90	816.1	1.87	237673.6	4.31
WEST VIRGINIA	6316.0	14.47	741979.3	13.47	2606.0	5.97	380028.9	6.90
WISCONSIN	.0	.00	.0	.00	11.7	.03	411.5	.01
TOTALS	43656.8	100.00	5510344.4	100.00	43656.8	100.00	5510344.4	100.00

NEWBURGH LOCK AND DAM

STATE	ORIGIN				DESTINATION			
	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	295.1	.63	43030.3	.75	2904.0	6.19	138509.1	2.41
ARKANSAS	67.4	.14	12305.6	.21	105.5	.22	28588.3	.50
FLORIDA	.0	.00	.0	.00	12.2	.03	1112.1	.02
ILLINOIS	3662.9	7.80	282852.3	4.93	2600.9	5.54	200001.1	3.48
INDIANA	3060.1	6.52	224374.6	3.91	7485.5	15.95	489425.2	8.53
IOWA	20.0	.04	3569.0	.06	434.5	.93	25367.9	.44
KANSAS	1.5	.00	216.4	.00	.0	.00	.0	.00
KENTUCKY	13141.6	28.00	746541.8	13.00	6968.9	14.85	927283.3	16.15
LOUISIANA	8209.1	17.49	1810704.0	31.54	9151.2	19.50	739382.0	12.88
MINNESOTA	232.8	.50	50531.5	.88	310.7	.66	22055.9	.38
MISSISSIPPI	492.8	1.05	93641.0	1.63	235.1	.50	51887.6	.90
MISSOURI	747.6	1.59	112552.1	1.96	886.1	1.89	84959.8	1.48
NEBRASKA	.0	.00	.0	.00	22.5	.05	11782.8	.21
OHIO	6310.1	13.44	780300.4	13.59	6543.1	13.94	1266915.7	22.07
OKLAHOMA	168.7	.36	28607.2	.50	121.3	.26	59977.9	1.04
PENNSYLVANIA	2057.9	4.38	352905.3	6.15	2681.3	5.71	740438.9	12.90
TENNESSEE	215.5	.46	36550.7	.64	3446.6	7.34	333656.5	5.81
TEXAS	3455.1	7.36	820756.3	14.30	817.6	1.74	237725.7	4.14
WEST VIRGINIA	4799.0	10.22	341314.7	5.95	1991.7	4.24	374000.6	6.51
WISCONSIN	.0	.00	.0	.00	218.5	.47	7683.0	.13
TOTALS	46937.1	100.00	5740753.3	100.00	46937.1	100.00	5740753.3	100.00

OHIO LOCK AND DAM 52

STATE	ORIGIN TONNAGE (1000)	ORIGIN PERCENT TOTAL TONNAGE	ORIGIN VALUE ($000)	ORIGIN PERCENT TOTAL VALUE	DESTINATION TONNAGE (1000)	DESTINATION PERCENT TOTAL TONNAGE	DESTINATION VALUE ($000)	DESTINATION PERCENT TOTAL VALUE
ALABAMA	799.5	1.10	142924.1	1.76	5251.2	7.24	536872.5	6.62
ARKANSAS	167.0	.23	31370.9	.39	956.8	1.32	40087.0	.49
FLORIDA	1.4	.00	200.8	.00	3505.1	4.83	123962.3	1.53
ILLINOIS	11181.8	15.42	815714.3	10.07	6690.1	9.22	408434.3	5.04
INDIANA	6867.1	9.47	644387.2	7.95	4606.5	6.35	548294.2	6.77
IOWA	578.4	.80	72269.2	.89	1398.9	1.93	65294.0	.81
KANSAS	166.9	.23	16924.9	.21	.0	.00	.0	.00
KENTUCKY	22201.9	30.61	929209.3	11.47	6430.2	8.87	1113529.0	13.74
LOUISIANA	11364.5	15.67	2420210.9	29.87	20590.3	28.39	1424306.2	17.58
MINNESOTA	1673.2	2.31	231717.5	2.86	414.3	.57	36256.3	.45
MISSISSIPPI	761.0	1.05	146468.5	1.81	2061.0	2.84	106732.1	1.32
MISSOURI	1432.8	1.98	177950.8	2.20	1377.8	1.90	139418.1	1.72
NEBRASKA	50.7	.07	6983.9	.09	34.6	.05	14090.8	.17
OHIO	3099.7	4.27	557477.9	6.88	5944.8	8.20	1227159.0	15.14
OKLAHOMA	352.8	.49	49503.7	.61	136.9	.19	63282.1	.78
PENNSYLVANIA	1846.4	2.55	292928.6	3.61	2588.2	3.57	704570.3	8.69
TENNESSEE	2216.7	3.06	281832.8	3.48	6933.1	9.56	868968.6	10.72
TEXAS	4358.5	6.01	1030023.3	12.71	1119.9	1.54	293177.0	3.62
VIRGINIA	.0	.00	.0	.00	.7	.00	103.9	.00
WEST VIRGINIA	3346.6	4.61	248628.0	3.07	1929.7	2.66	368899.4	4.55
WISCONSIN	58.8	.08	7047.4	.09	559.7	.77	20535.1	.25
TOTALS	72527.7	100.00	8103772.0	100.00	72527.7	100.00	8103772.0	100.00

OHIO LOCK AND DAM 53

	ORIGIN				DESTINATION			
STATE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	800.9	1.20	143047.0	1.80	5182.9	7.77	533271.4	6.71
ARKANSAS	167.0	.25	31370.9	.39	956.8	1.43	40087.0	.50
FLORIDA	1.4	.00	200.6	.00	3505.1	5.25	123962.3	1.56
ILLINOIS	8271.6	12.40	755062.4	9.50	3950.6	5.92	356811.7	4.48
INDIANA	6844.2	10.26	643555.3	8.09	2182.2	3.27	463055.8	5.82
IOWA	578.4	.87	72269.2	.91	1396.9	2.09	65294.0	.82
KANSAS	168.9	.25	16924.9	.21	.0	.00	.0	.00
KENTUCKY	19337.5	28.99	828359.5	10.42	5092.6	7.63	1064042.9	13.38
LOUISIANA	11466.0	17.19	2432860.7	30.60	20883.5	31.30	1440348.7	18.11
MINNESOTA	1673.2	2.51	231717.5	2.91	414.3	.62	36256.3	.46
MISSISSIPPI	761.0	1.14	146468.5	1.84	2061.0	3.09	106732.1	1.34
MISSOURI	1440.4	2.16	178579.5	2.25	1576.8	2.36	151784.2	1.91
NEBRASKA	50.7	.08	6983.9	.09	39.0	.06	14363.8	.18
OHIO	3099.7	4.65	557477.9	7.01	5937.3	8.90	1226895.3	15.43
OKLAHOMA	352.8	.53	49503.7	.62	136.9	.21	63282.1	.80
PENNSYLVANIA	1846.4	2.77	292928.6	3.68	2588.2	3.88	704570.3	8.86
TENNESSEE	2216.7	3.32	281832.8	3.54	7196.9	10.79	878303.6	11.05
TEXAS	4361.2	6.54	1031425.0	12.97	1119.9	1.68	293177.0	3.69
VIRGINIA	.0	.00	.0	.00	.7	.00	103.9	.00
WEST VIRGINIA	3214.0	4.82	243963.1	3.07	1929.7	2.89	368899.4	4.64
WISCONSIN	58.8	.09	7047.4	.09	559.7	.84	20535.1	.26
TOTALS	66710.8	100.00	7951576.6	100.00	66710.8	100.00	7951576.6	100.00

KENTUCKY LOCK

STATE	ORIGIN TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	DESTINATION TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	987.6	4.26	154967.2	7.43	8198.8	35.35	668293.0	32.05
ARKANSAS	41.2	.18	8592.7	.41	113.8	.49	1452.9	.07
ILLINOIS	3908.3	16.85	301809.0	14.48	560.4	2.42	40285.3	1.93
INDIANA	848.3	3.66	139112.8	6.67	6.3	.03	927.9	.04
IOWA	556.8	2.40	68599.7	3.29	198.6	.85	8887.8	.43
KANSAS	139.0	.60	13981.1	.67	.0	.00	.0	.00
KENTUCKY	5642.5	24.33	179852.7	8.63	319.0	1.38	48978.7	2.35
LOUISIANA	1650.3	7.12	299650.6	14.37	3243.8	13.99	215088.7	10.32
MINNESOTA	1278.9	5.51	154371.0	7.40	37.1	.16	11019.4	.53
MISSISSIPPI	198.3	.85	37121.6	1.78	743.9	3.21	36369.1	1.74
MISSOURI	557.2	2.40	50687.9	2.43	171.7	.74	26122.5	1.25
NEBRASKA	50.7	.22	6983.9	.33	12.2	.05	2308.0	.11
OHIO	3023.6	13.04	173408.3	8.32	249.4	1.08	15030.8	.72
OKLAHOMA	113.1	.49	7551.2	.36	14.3	.06	2523.3	.12
PENNSYLVANIA	188.8	.81	52294.5	2.51	32.3	.14	16422.7	.79
TENNESSEE	2127.3	9.17	254939.5	12.23	9008.4	38.84	944303.9	45.29
TEXAS	492.7	2.12	112398.3	5.39	248.0	1.06	43738.3	2.10
WEST VIRGINIA	1333.0	5.75	61595.0	2.95	37.6	.16	2294.7	.11
WISCONSIN	58.8	.25	7047.4	.34	1.8	.01	919.6	.04
TOTALS	23194.5	100.00	2084984.5	100.00	23194.5	100.00	2084984.5	100.00

WINFIELD LOCK AND DAM

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

STATE	ORIGIN TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	DESTINATION TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	2.9	.02	101.8	.01	18.0	.13	3938.5	.39
ILLINOIS	4.2	.03	905.7	.09	47.0	.35	7804.4	.77
INDIANA	466.6	3.49	4720.5	.47	7.2	.05	781.3	.08
KENTUCKY	411.5	3.07	5755.3	.57	42.7	.32	3195.8	.32
LOUISIANA	230.2	1.72	28785.8	2.85	109.3	.82	5173.9	.51
MISSOURI	1.4	.01	115.8	.01	.0	.00	.0	.00
OHIO	956.7	7.15	75332.3	7.47	3488.3	26.05	124389.8	12.33
PENNSYLVANIA	9.0	.07	1971.5	.20	1107.3	8.27	42644.4	4.23
TENNESSEE	3.6	.03	793.5	.08	9.2	.07	1824.5	.18
TEXAS	530.5	3.96	118069.0	11.71	66.4	.50	13650.1	1.35
WEST VIRGINIA	10772.9	80.46	771906.8	76.54	8494.3	63.44	805055.5	79.83
TOTALS	13389.5	100.00	1008458.1	100.00	13389.5	100.00	1008458.1	100.00

MARMET LOCK AND DAM

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

STATE	ORIGIN TONNAGE (1000)	ORIGIN PERCENT TOTAL TONNAGE	ORIGIN VALUE ($000)	ORIGIN PERCENT TOTAL VALUE	DESTINATION TONNAGE (1000)	DESTINATION PERCENT TOTAL TONNAGE	DESTINATION VALUE ($000)	DESTINATION PERCENT TOTAL VALUE
ALABAMA	2.9	.04	101.8	.03	.0	.00	.0	.00
ILLINOIS	.0	.00	.0	.00	22.0	.32	2094.5	.62
INDIANA	41.5	.60	366.8	.11	.0	.00	.0	.00
KENTUCKY	16.9	.25	153.6	.05	38.0	.55	2151.0	.64
LOUISIANA	81.7	1.19	7934.2	2.36	72.8	1.06	2620.6	.78
MISSOURI	1.4	.02	115.8	.03	.0	.00	.0	.00
OHIO	108.7	1.58	5073.1	1.51	3367.4	48.92	118459.5	35.16
PENNSYLVANIA	.0	.00	.0	.00	1042.7	15.15	36842.5	10.94
TENNESSEE	.0	.00	.0	.00	1.5	.02	113.1	.03
TEXAS	185.2	2.69	40518.1	12.03	3.1	.04	107.8	.03
WEST VIRGINIA	6444.6	93.63	282618.7	83.89	2335.4	33.93	174493.1	51.80
TOTALS	6882.8	100.00	336882.1	100.00	6882.8	100.00	336882.1	100.00

LOCK AND DAM 2 (MON)

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

	ORIGIN				DESTINATION			
STATE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	2.9	.02	1446.2	.14	134.3	.78	15322.4	1.45
ARKANSAS	1.9	.01	243.3	.02	1.2	.01	644.9	.06
ILLINOIS	2.8	.02	297.1	.03	556.8	3.24	23913.1	2.27
INDIANA	5.9	.03	581.3	.06	37.8	.22	10986.7	1.04
KENTUCKY	268.0	1.56	18434.7	1.75	139.4	.81	56746.3	5.38
LOUISIANA	280.4	1.63	39840.3	3.78	364.0	2.12	30121.4	2.86
MISSISSIPPI	18.8	.11	2971.9	.28	6.8	.04	1684.8	.16
MISSOURI	7.1	.04	868.8	.08	44.2	.26	1554.4	.15
OHIO	349.6	2.04	8971.2	.85	1987.4	11.57	146188.1	13.87
OKLAHOMA	.0	.00	.0	.00	18.2	.11	8665.2	.82
PENNSYLVANIA	8216.7	47.85	591486.5	56.12	9324.2	54.30	490370.2	46.53
TENNESSEE	2.1	.01	517.2	.05	952.2	5.54	41822.0	3.97
TEXAS	61.4	.36	19824.2	1.88	156.0	.91	40945.7	3.89
WEST VIRGINIA	7954.5	46.32	368417.7	34.96	3449.8	20.09	184935.2	17.55
TOTALS	17172.2	100.00	1053900.4	100.00	17172.2	100.00	1053900.4	100.00

LOCK AND DAM 3 (MON)

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

	ORIGIN				DESTINATION			
STATE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	2.9	.02	1446.2	.15	101.1	.54	5495.9	.58
ARKANSAS	1.2	.01	181.3	.02	.0	.00	.0	.00
ILLINOIS	.0	.00	.0	.00	548.5	2.92	21057.2	2.16
INDIANA	4.5	.02	352.7	.04	13.1	.07	6195.4	.64
KENTUCKY	146.4	.78	13741.9	1.41	135.2	.72	56070.0	5.75
LOUISIANA	116.7	.62	24048.2	2.47	287.6	1.53	10181.3	1.04
MISSISSIPPI	17.6	.09	2776.4	.28	5.4	.03	1205.9	.12
MISSOURI	7.1	.04	868.6	.09	42.6	.23	1498.0	.15
OHIO	105.1	.56	1048.9	.11	1879.0	10.00	123546.4	12.68
OKLAHOMA	.0	.00	.0	.00	17.4	.09	8275.8	.85
PENNSYLVANIA	11096.7	59.06	587327.3	60.28	11427.7	60.82	528788.2	54.27
TENNESSEE	.0	.00	.0	.00	942.2	5.01	39369.7	4.04
TEXAS	4.0	.02	522.6	.05	13.9	.07	3868.2	.40
WEST VIRGINIA	7287.7	38.79	342031.8	35.10	3376.1	17.97	168814.0	17.33
TOTALS	18789.9	100.00	974346.0	100.00	18789.9	100.00	974346.0	100.00

LOCK AND DAM 4 (MON)

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

STATE	ORIGIN				DESTINATION			
	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	.0	.00	.0	.00	89.0	.53	3127.9	.45
ILLINOIS	.0	.00	.0	.00	427.4	2.53	16799.2	2.42
KENTUCKY	64.0	.38	2249.1	.32	17.8	.11	2470.0	.36
LOUISIANA	12.5	.07	2654.2	.38	69.0	.41	2426.4	.35
MISSOURI	2.9	.02	238.4	.03	.0	.00	.0	.00
OHIO	95.9	.57	959.8	.14	1852.2	10.97	114340.7	16.44
PENNSYLVANIA	9195.5	54.46	432694.1	62.22	10122.5	59.95	348774.0	50.15
TENNESSEE	.0	.00	.0	.00	929.8	5.51	35502.4	5.10
TEXAS	.0	.00	.0	.00	12.4	.07	3642.5	.52
WEST VIRGINIA	7513.1	44.50	256664.4	36.91	3363.7	19.92	168376.8	24.21
TOTALS	16883.8	100.00	695459.9	100.00	16883.8	100.00	695459.9	100.00

LOCK AND DAM 7 (MCN)

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

STATE	ORIGIN				DESTINATION			
	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	.0	.00	.0	.00	86.0	.70	3023.7	.64
ILLINOIS	.0	.00	.0	.00	1.5	.01	51.1	.01
KENTUCKY	64.0	.52	2249.1	.48	13.6	.11	479.6	.10
OHIO	1.1	.01	39.1	.01	852.8	6.96	29964.0	6.34
PENNSYLVANIA	1628.6	13.30	108877.8	23.02	8010.3	65.41	271250.8	57.35
TENNESSEE	.0	.00	.0	.00	863.7	7.05	30387.3	6.42
TEXAS	.0	.00	.0	.00	3.1	.03	109.0	.02
WEST VIRGINIA	10551.8	86.17	361831.6	76.50	2414.4	19.72	137732.1	29.12
TOTALS	12245.4	100.00	472997.6	100.00	12245.4	100.00	472997.6	100.00

LOCK AND DAM 8 (MON)

OHIO RIVER BASIN WATERWAY
1984 COMMODITY TRAFFIC

TOTAL TONNAGE AND VALUE PER STATE

	ORIGIN				DESTINATION			
STATE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE	TONNAGE (1000)	PERCENT TOTAL TONNAGE	VALUE ($000)	PERCENT TOTAL VALUE
ALABAMA	.0	.00	.0	.00	83.1	.77	2920.9	.69
ILLINOIS	.0	.00	.0	.00	1.5	.01	51.1	.01
KENTUCKY	64.0	.59	2249.1	.53	13.6	.13	479.6	.11
OHIO	1.1	.01	39.1	.01	258.2	2.38	9079.3	2.14
PENNSYLVANIA	221.1	2.04	59390.6	14.02	7269.1	67.07	245190.8	57.89
TENNESSEE	.0	.00	.0	.00	863.7	7.97	30367.3	7.17
TEXAS	.0	.00	.0	.00	3.1	.03	109.0	.03
WEST VIRGINIA	10551.8	97.36	361831.6	85.44	2345.6	21.64	135312.4	31.95
TOTALS	10837.9	100.00	423510.4	100.00	10837.9	100.00	423510.4	100.00

STATEMENT OF ANTONINE LAFATA SOTTILE, DOCTOR OF ENGINEERING

Senator COCHRAN. Dr. Antonine Lafata Sottile. Welcome to the committee. We appreciate your being here to testify concerning the Department of Energy programs.

Mr. SOTTILE. Mr. Chairman, the projects summarized on page 2 of my application increase in importance with the passing of time, but they require years of experiments before going into commercial exploitation thereby assuring returns.

My project of settling Beam-Splitting Filter Mirror Concentrators in Earth's synchronous orbit will require one decade of preparation before providing widespread application in the next century.

The selected monochromactic beams, focusing on photovoltaics of appropriate band gap, will assure a tenfold efficiency increase in providing electric power above currently operating silicon photovoltaics and will become competitive with oil, gas, coal, and nuclear.

To conserve the leadership in exploiting solar power is necessary to avoid lost time, face to the fiery competition of other countries in this field.

My project to condition planet Venus and planet Mars will require 50 years at least, opening new frontiers to the multiplying world population, from the present 5 billion which will reach 8 billion in the next 35 years.

The requirements for human life in space are five: Air, water, food, gravity, and shielding from sky radiations. They can be arranged elsewhere. The most difficult requirement is gravity.

In weightless space, it is not difficult to simulate gravity by rotation. An habitat, a factory, et cetera, can be easily put in rotation, and they continue to rotate indefinitely.

In a planet the artificial rotation requires uninterrupted supply of power. Planet Venus is advantaged as concerning an Earth-like settlement. Its size and gravity are near our Earth's ones.

Its heavy atmosphere of carbon dioxide by laser beam fission will be conditioned to be suitable to human life. The fission of CO^2 into carbon and oxygen will provide oxygen for the atmosphere, ozone for a layer of protection against sky radiation, oxygen to react with hydrogen atomic and molecular whose clouds penetrate into the solar system, or react with hydrogen provided by other sources to provide water.

Captured comets will provide water also, watering and fertilizing the soil to grow the food. It is postulated that the oceans in our planet Earth have been generated by uninterrupted impact of small comets.

The pure carbon resulting from the fision of carbon dioxide could be exploited to yield diamond. Bricks of diamond could be employed to build edifices and to pave the roads in planet Venus.

The exploitation of the enormous resources inside the solar system, and successively beyond it, will make free the humankind from the limited resources of our planet Earth.

See my project to reach a star 4 light years far away in a lapse of 12.34 years, starting from a base settled on a planet Mars, intelligent robots being the crew of the first ship, followed by successive manned ships.

The space enterprise, apart from long range benefits and returns, will generate in our nation unlimited industrial incentives, and possiblities of work, will advance science and technology, and maintain the United States of America's high-tech advantage in the 21st century.

The pioneers of the space frontier should take into consideration the historical example of the settlement of the new world, where, after its discovery 500 years ago, at present, English, Spanish, and Portuguese languages are spoken by more people than in Europe, generating also strong economics.

These pioneers should follow alike methods and spirit, as employed by the pioneers of the new world.

Thank you, Mr. Chairman.

Senator COCHRAN. Thank you, Dr. Sottile, for being here and for testifying before our subcommittee. Thank you very much.

[The statement follows:]

STATEMENT OF ANTONINE LAFATA SOTTILE, PH. DOCTOR OF ENGINEERING

Attention : Honorable SENATE COMMITTEE on APPROPRIATIONS

My VOICE Statement to COMPLEMENT my Application to Testify of January 21. 1987 -

March 24. 1987 -

Honorable Chairman and Members of the COMMITTEE -

Opportunity to give consideration of emergency Importance to my Projects, is my ADVISE to AUTHORITIES and STAFFERS. These Projects, summarized on page 2. of my Application, increase their Importance by passing of time, but they require years of experiments before going into commercial exploitation and assuring returns.

- My Project of settling Beam-Splitting Filter-Mirrors Concentrators in Earth's Synchronous ORBIT will require one decade of preparation, before providing widespread application next Century. The selected mono-chromatic Beams, focusing on Photo-Voltaics of appropriate BAND-GAP, will assure a TEN-FOLD efficiency increase in providing electric POWER above currently operating Silicon Photovoltaics and will become competitive with OIL, GAS, COAL, NUCLEAR .
  To conserve the Leadership in exploiting SUN-Power is necessary to avoid lost time, face to the FIERY competition of other Countries in this FIELD.
- My Project to condition Planet VENUS and Planet MARS will require 50. years at least, opening new Frontiers to the multiplying World population, that from the present 5. Billion will reach 8. Billion Elements in the next 35. years.
- The requirements for human Life in Space are FIVE : AIR, WATER, FOOD, GRAVITY, SHIELDING from SKY radiations.
  They can be arranged elsewhere. The most difficult requirement is GRAVITY. In WEIGHTLESS Space, it is not difficult to SIMULATE Gravity by Rotation : An HABITAT, a FACTORY, etc., can be easily put in Rotation, and they continue to rotate indefinitely. In a Planet the artificial Rotation requires uninterrupted supply of power. Planet VENUS is advantaged as concerning an EARTH-like Settlement : Its SIZE and Gravity are near our EARTH's ones. Its heavy Atmosphere of Carbon-DIOXIDE by LASER Beam FISSION will be conditioned to be suitable to human Life.
  The Fission of CO.2 into CARBON and OXYGEN will provide Oxygen for the Atmosphere; OZONE for a Layer of protection against SKY radiation; Oxygen to react with Hydrogen Atomic and Molecular, whose Clouds penetrate into the Solar System, or react with Hydrogen provided by other sources to provide WATER. Captured COMETS will provide Water also.
  It is postulated that the Oceans in our Planet Earth have been generated by uninterrupted Impact of small Comets.
  The pure CARBON resulting from the FISSION of CO.2 could be exploited to yield DIAMOND. BRICKS of DIAMOND could be employed to build Edifices, and to PAVE the Roads in Planet VENUS
  - The exploitation of the enormous resources inside the Solar System, and successively beyond it, will make FREE the HUMAN KIND from the limited resources of our Planet EARTH.
    SEE my Project to reach a STAR 4. LIGHT-YEARS far away in a lapse of 12.34 years, starting from a BASE settled on Planet MARS, intelligent ROBOTS being the CREW of the First Ship, followed by successive MANNED Ships.
  - The Space Enterprise, apart long range BENEFITS and returns, will generate in our NATION unlimited Industrial Incentives,

and possibilities of Works; will advance Science and Technology, and maintain the USA's HIGH-TECH advantage in the 21.st Century. The PIONEERS of the Space Frontier should take into consideration the hystorical example of the Settlement of the NEW WORLD, where, after its Discover 500. years ago, at present, English, Spanish, and Portuguese languages are spoken by more People than in EUROPE, generating also stronger ECONOMICS.
These PIONEERS should follow alike Methods and Spirit, as employed by the PIONEERS of the NEW WORLD.

THANK YOU

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Department of Energy Programs

PREPARED STATEMENTS

Senator Cochran. Before closing, I should indicate that the subcommittee had planned a hearing to cover programs of the Department of Energy. However, other conflicts will not allow us to hold that hearing, so the chairman, Senator Johnston, has asked that all of those statements related to DOE programs be placed in the record at this point.

[The statements follow:]

STATEMENT OF THE AMERICAN CHEMICAL SOCIETY

The American Chemical Society appreciates this opportunity to present its views on the Department of Energy's FY 1988 budget request and to comment upon specific support for research in the Office of Basic Energy Sciences (BES).

A principal foundation of U.S. energy policy should be the continuance and sustenance of long-range basic energy research. Such research will provide the knowledge base for new technologies and alternate sources of energy. The Energy Research Advisory Board (ERAB) has recognized the importance of BES programs to provide "central, long-range support for the DOE energy mission," and considers growth for BES programs as a high priority.

Capitalizing on the knowledge gained from long-range basic energy research means more than contributions to energy technologies; it also means contributions to the Nation's leadership in science and technology, its economic competitiveness, and its ability to train scientists and engineers. Since BES supports major user research facilities, there is the additional bonus of technology transfer as a result of interactions among industrial, academic, and government researchers.

The Society is pleased that there are proposed increases in FY 1988 for the operating expenses of the Chemical Sciences, Materials Sciences, and Energy Biosciences programs in the Office of Basic Energy Sciences. However, a look at historical budget tables indicates that growth has been far from optimum, especially for Chemical Sciences. Over the period FY 1980-87, the overall budget of BES increased by 34 percent in constant dollars, and Materials Sciences by 37 percent. Over the same eight year period, the Chemical Sciences Division budget rose by six percent. Worse yet, in constant dollars, the 1987 Chemical Sciences budget is actually below that of 1984. These patterns of growth demonstrate a DOE policy of neglect of chemistry-related research.

Another energy crisis is just around the corner. This crisis can be averted if we invest in basic research now, especially chemical research. Over 90 percent of our energy consumption is based on chemical technologies. Chemistry will continue to be the central scientific discipline in meeting the nation's energy requirements.

Research Recommendations

Given the importance of chemistry-related research, and the far from positive budgetary record, especially for the Chemical Sciences Division, the American Chemical Society recommends that:

- The operating budget of the Chemical Sciences Division be doubled in current dollars over the next five years. This growth should begin with a 20 percent increase in FY 1988 to $138.1 million.
- The operating budget of the Materials Sciences Division receive an increase of 15 percent in FY 1988 to $178.2 million.
- The operating budget of the Energy Biosciences Division be increased by 20 percent in FY 1988 to $19.8 million due to the promise of new biological energy sources.

These proposed increases are of the same magnitude as the federal increases in research and development during the post-Sputnik era, and are appropriate considering the importance of energy to our economic future.

Research Directions

Opportunities in the chemical sciences have been identified in briefings and reports conducted by the National Academy of Sciences. The Report, Opportunities in Chemistry(1), delineated various scientific frontiers that

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1. National Research Council, Opportunities in Chemistry (Washington, D.C.: National Academy Press; 1985).

have the potential for payoffs to energy. Discussed in that Report are areas that relate directly to the chemical research conducted in the Divisions of Materials and Chemical Sciences, and Energy Biosciences—reaction dynamics, catalysis, combustion, corrosion, and plant sciences. In this context, the budget growth we now propose is modest compared to the potential benefits to be derived from new and cleaner processes, new fuels, and new materials that will flow from these chemically-oriented programs.

Chemical research funded through the Chemical Sciences Division has already reached the patentable or commercialization stage. One example is RAPRENOx, a process to remove nitrogen oxides from exhaust gases such as those from diesel engines. Nitrogen oxides are considered to be precursors of photochemical smog formation and acid rain. A patent application for the process has been submitted, and a waiver of patent rights has been granted to the inventor to foster rapid commercialization in the private sector. Industrial funding has already begun. The discovery of the process occurred during fundamental studies of the combustion chemistry of nitrogen carried out at the Combustion Research Facility of Sandia National Laboratory-Livermore.

Another example of chemical sciences-supported research is a novel detector for measurement of trace amounts in complex samples such as fossil fuels. The detector has recently become commercially available through CETAC Technologies. Discovered and developed by chemists at Ames Laboratory (Iowa State University), the device--an optical helium afterglow detector--makes use of the same phenomenon that creates the aurora borealis, that is, formation of long-lived electrically charged species that eventually emit characteristic light. The new detector has advantages over the best previous devices.

An area of great potential contribution to the energy picture and to the U.S. economy is research on superconductors. Superconducting materials that allow electricity to be transmitted at relatively warm temperatures hold the key to future advances in many areas related to energy, especially conservation. Advances in the field can lead to improved power systems that make more efficient use of generators and electricity storage. Also, the new materials have applications for electronics and transportation. This research is so new--and is advancing at such a breathtaking pace--that discoveries made yesterday are being supplanted by discoveries made today. With commercial applications viable within twenty years or less, active, vigorous research that adds to the understanding of superconductors is essential. Scientists do not know why the high-temperature superconducting materials work, making chemical research to understand the properties of these materials vital. In addition, the chemical synthesis of new superconducting materials, and the processes that best produce superconductors, must be explored to the fullest extent.

Academic Research Support

The Society commends the Department of Energy for maintaining a strong component of its research at universities in recognition of the vital part that these institutions play in the research process. The larger part of the operating budget supports major facilities and research at national laboratories. The balance among research performers should be a continual subject of discussion and, if necessary, be adjusted.

The ACS also believes that the 4-year old University Instrumentation program under the Office of Energy Research (OER) is underfunded. This subprogram was established to alleviate the pressing need among DOE researchers for state-of-the-art instrumentation costing over $100,000 a piece. A secondary consideration was to enable graduate students to use such instrumentation. In FY 1986, only 30 awards were made while 204 applications were received. At least another 30 awards could have been made given the additional funding. In order to relieve this backlog, the ACS recommends that the University Instrumentation program receive an increase in FY 1988 of 50 percent to $7.5 million.

OER also reaches out through its University Research Support program to provide research and education appointments and projects at National Laboratories for university faculty, graduates, and undergraduates as well as high school teachers and students. The program supports visiting industrial scientists at National Laboratories on a cost-shared basis. The Department of Energy is to be applauded for these efforts.

Given the limited resources currently available within the Office of Basic Energy Sciences, the ACS is pleased that a BES Advisory Committee was established last year to advise DOE on long-range plans, priorities, and strategies. This advice will permit more effective implementing of Department policies and programs within BES, and the recommending of appropriate funding levels and balance among competing program elements. The ACS believes that the Advisory Committee should have the leeway to look at other parts of OER programs such as the University Instrumentation and Research Support Programs.

The ACS hopes these recommendations will assist your Subcommittee in its deliberations on the DOE budget for FY 1988. The Society considers that the costs of the recommendations outlined are modest compared to the many potential benefits to DOE's energy mission and to the economy as a whole.

Table 1

DOE

Basic Energy Sciences

Operating Expenses Budget History
($ millions)

Fiscal Year	Actual	Constant (1972) Dollars
1980	196.060	110.394
1981	209.468	107.254
1982	224.193	107.116
1983	260.827	119.865
1984	294.090	130.186
1985	337.250	143.939
1986	335.887** (326.714)	134.195
1987*	382.082** (371.640)	148.036
1988*	414.087** (403.044)	154.965

* Proposed figures.
** Contains Nuclear Data Activities that are proposed for transfer to the Nuclear Physics program in FY 1988; figures obtained from DOE.

Source: DOE and Budget Justification Books

Table 2

DOE

Materials Sciences Division

Operating Expenses Budget History
($ millions)

Fiscal Year	Actual	Constant (1972) Dollars
1980	78.000	43.919
1981	89.083	45.613
1982	95.506	45.631
1983	108.163	49.707
1984	124.560	55.139
1985	132.227	56.435
1986	132.573	52.966
1987*	154.991	60.051
1988*	169.791	63.545

* Proposed Figures.

Source: DOE Budget Justification Books

Table 3

DOE

Chemical Sciences Division

Operating Expenses Budget History
($ million)

Fiscal Year	Actual	Constant (1972) Dollars
1980	54.400	30.631
1981	59.717	30.577
1982	63.187	30.190
1983	70.000	32.169
1984	75.165	33.274
1985	78.592	33.543
1986	78.123 (104.305**)	31.212
1987*	83.879 (115.080**)	32.499
1988*	91.153 (124.103**)	34.114

* Proposed figures.
** Includes transfers from Nuclear Sciences Division

Source: DOE and Budget Justification Books

Table 4

DOE

Energy BioSciences Division

Operating Expenses Budget History
($ million)

Fiscal Year	Actual	Constant (1972) Dollars
1980	6.000	3.378
1981	7.250	3.712
1982	8.419	4.022
1983	9.500	4.366
1984	10.534	4.663
1985	12.360	5.275
1986	11.811	4.719
1987*	16.500	6.393
1988*	18.550	6.942

* Proposed figures.

Source: DOE Budget Justification Books

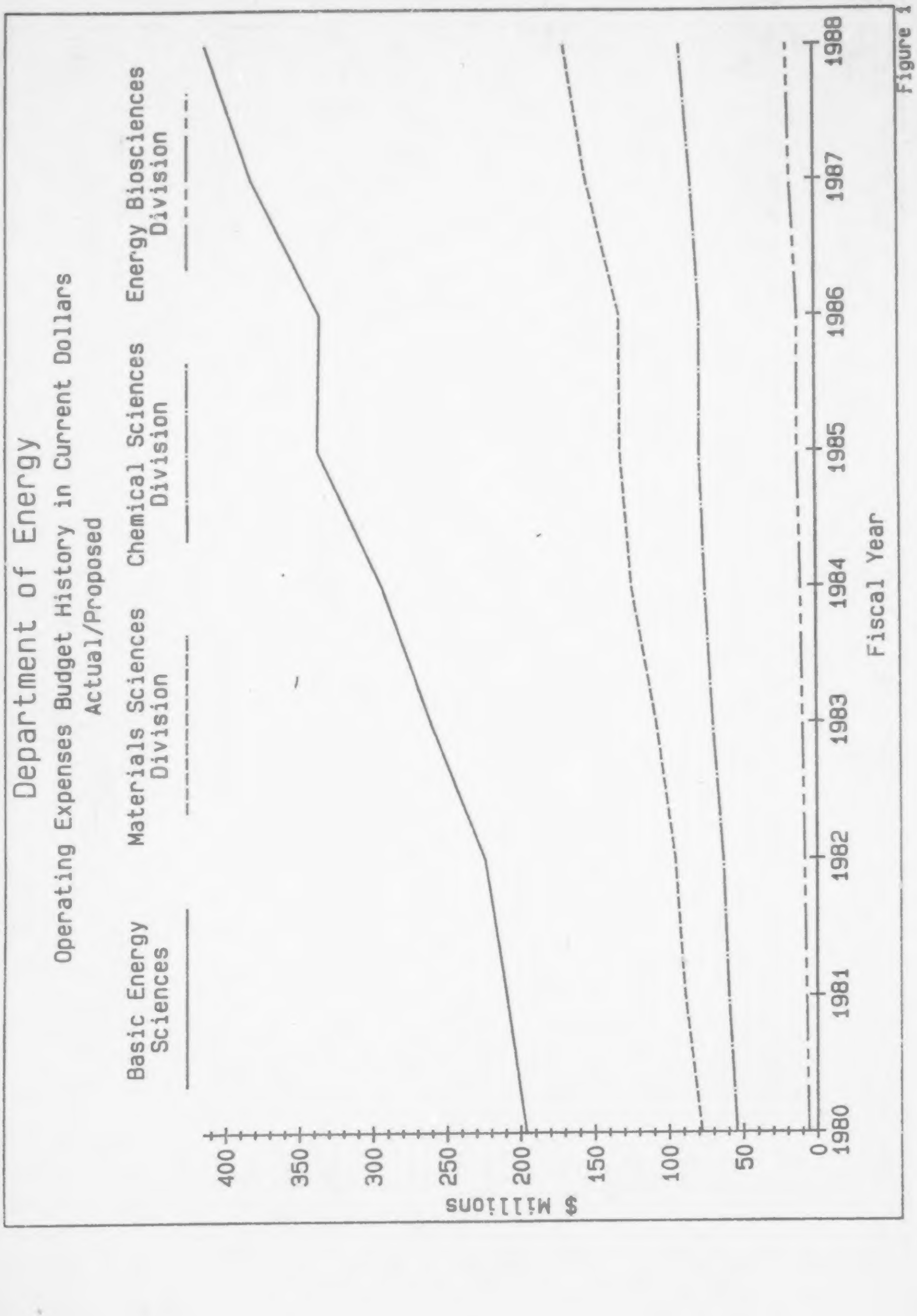

Department of Energy
Operating Expenses Budget History in Current Dollars
Actual/Proposed
Basic Energy Sciences
Materials Sciences Division
Chemical Sciences Division
Energy Biosciences Division
$ Millions
400
350
300
250
200
150
100
50
0
1980
1981
1982
1983
1984
1985
1986
1987
1988
Fiscal Year

Figure 1

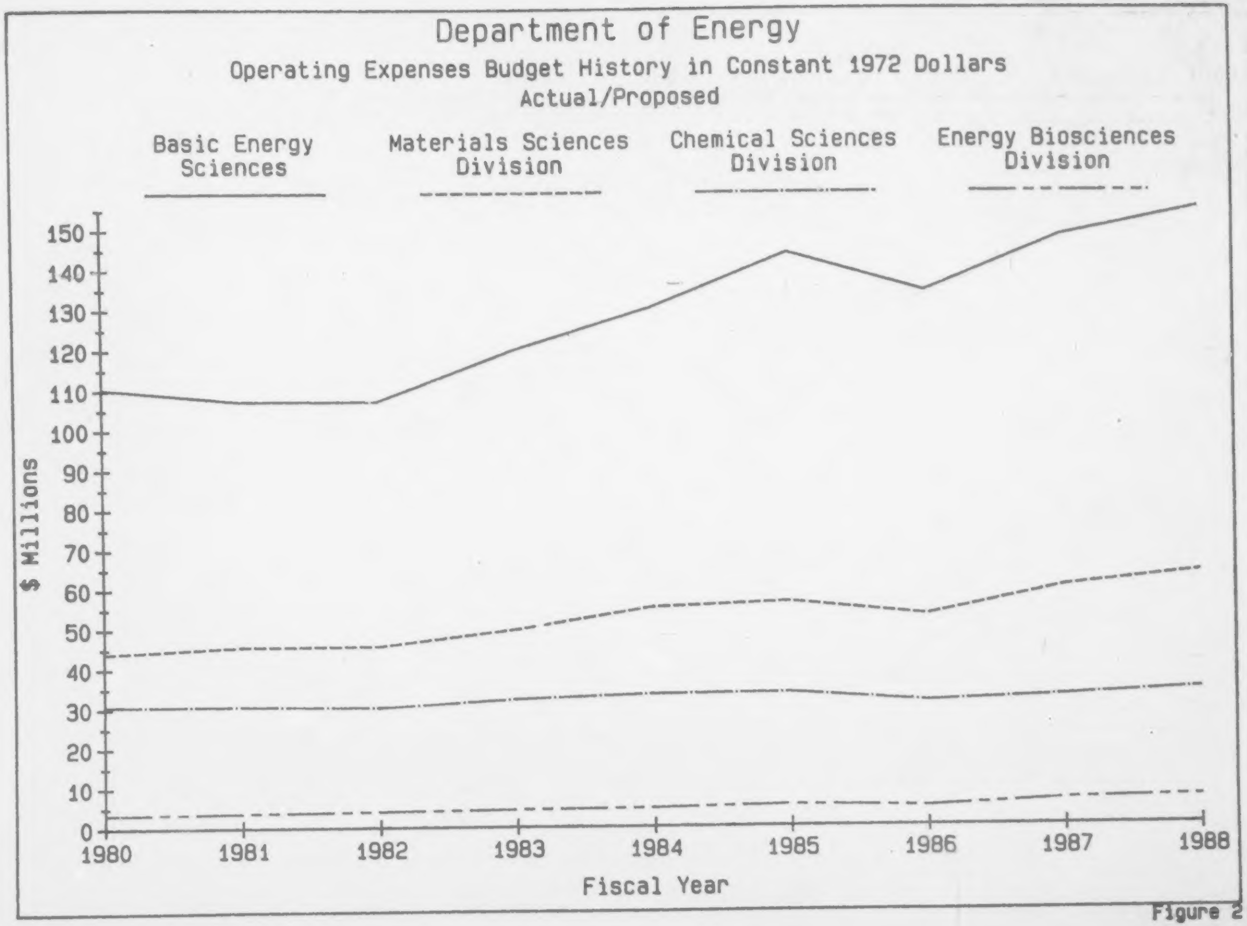

Department of Energy
Operating Expenses Budget History in Constant 1972 Dollars
Actual/Proposed
Basic Energy Sciences
Materials Sciences Division
Chemical Sciences Division
Energy Biosciences Division
$ Millions
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1980
1981
1982
1983
1984
1985
1986
1987
1988
Fiscal Year

Figure 2

STATEMENT OF THE AMERICAN PUBLIC POWER ASSOCIATION

The American Public Power Association, the national service organization representing more than 1,750 local publicly owned electric utilities in 49 states, submits this statement concerning Fiscal Year 1988 appropriations for the federal power marketing administrations, the Corps of Engineers, the Nuclear Regulatory Commission, the Department of Energy's uranium enrichment program and the Office of Civilian Radioactive Waste Management, and the nonpower budget for the Tennessee Valley Authority.

Power Marketing Administrations

This subcommittee is very familiar with the Administration's repeated efforts to "privatize" the federal power marketing administrations (PMAs). APPA appreciates the subcommittee's direct involvement and leadership in last year's fight to block this initiative. APPA continues to oppose the sale of the nation's federal power marketing agencies and supports the prohibition on expenditures of funds to study the sale of the PMAs contained in Section 208 of P.L. 99-349.

APPA believes the sale of the PMAs would: escalate electric rates and disrupt the economy of several regions of the country; eliminate a dependable source of revenue to the Treasury without reducing the burden of the deficit; threaten the power supply of over 1,100 consumer owned utilities and gut electric utility competition; and disrupt management of the nation's multipurpose water projects.

The Administration's current privatization proposal calls for selling all five PMAs by the end of 1992 and singles out the two smallest power marketing administrations -- the Alaska and Southeastern Power Administrations -- for sale by 1989. APPA views this as a "divide and conquer" strategy designed to lessen political opposition. While the Alaska Power Administration was not included in the prohibition contained in P.L. 99-349, the prohibition does apply to the Southeastern Power Administration. The Administration submitted language, as part of its FY 1987 supplemental appropriations request, to lift the spending prohibition on efforts to privatize Southeastern. APPA urges the subcommittee to reject that request. The Administration has also announced that it will send authorizing legislation to Congress in the near future.

The Administration has cast its proposal for Southeastern as an effort to "study" the possible sale of the agency. However, it seems clear that no objective study is in fact anticipated. The Administration's past efforts to sell the PMAs indicate an initiative predicated on ideology, not sound public policy or business sense, and this appears to remain the primary motivation. For instance, although no "study" has been conducted, the Administration budget for FY 1988 nonetheless assumes sale of that asset. As noted by the House Government Operations Committee in House Report 99-935, "although the Department [of Energy] portrayed its efforts as a 'study' of asset divestiture, the Department has not conducted, and apparently does not intend to conduct, objective studies to test the premises and verify the assumed merits of asset divestiture."

The federal power program supplies power, at wholesale, to some 1,100 consumer owned utilities. If the PMAs were sold, these utilities would be denied a reliable source of low-cost power. It is doubtful whether some of the smaller local public power systems and rural electric co-ops would survive this loss of power supply. Hence, sale of the power marketing agencies would likely increase the concentration of control in the electric utility industry and decrease competition.

Further, sale of the PMAs would decrease efficiency at the nation's multipurpose water projects by divorcing power production from the management of these facilities for other project purposes.

The Administration's FY 1988 budget also proposes changes in the repayment methodology for the federal power marketing administrations. The current repayment methodology affords rate stability, flexibility to account for varying hydrologic conditions, and full and timely repayment of the federal investment. By the Administration's own admission, the PMAs are making their payments in a regular, business-like fashion. The proposed changes would eliminate the necessary flexibility in the current system, lead to immediate rate increases, and cause rate instability. APPA urges the subcommittee to oppose changes to existing repayment methodology and schedules.

Corps of Engineers

The Army Corps of Engineers FY 1988 budget request is $3.5 billion. There are no new starts for hydroelectric projects in the budget. APPA supports that portion of the Corps budget allocated to hydroelectric projects for general investigations, general construction, and operation and maintenance.

As this subcommittee is aware, under Section 723 of last year's Omnibus Water Resources Act, the Corps is directed to submit to Congress before October, 1987, a report on the status of feasibility studies at existing Corps projects in the Great Lakes area. APPA shares the subcommittee's interest in the outcome of this report.

We believe that hydro development at existing Corps projects in the Great Lakes region is necessary, feasible, and desirable. A 1981 DOE report estimates that 2.6 million kilowatts of capacity could be installed at 107 existing Corps projects in that area. Assuming load growth of three percent annually, the report estimates that loads of preference customers in that area will be seven times the potential resources by the year 2010. This additional capacity would benefit consumers and consumer-owned utilities without new construction, bring to the area the benefits of regional planning and development, and make an important contribution to development of the additional electric generating capacity now projected to be needed in every region of the country before the turn of the century.

Office of Civilian Radioactive Waste Management

The DOE FY 1988 budget request for the Office of Civilian Radioactive Waste Management to carry out the Nuclear Waste Policy Act (NWPA) is $500 million. At a later date, DOE intends to submit a budget amendment for a $725 million program, which will allow the Department to proceed with extensive site characterizations and start exploratory shaft construction.

APPA supports the NWPA as enacted, which includes authorization for a permanent waste repository, a site selection process for a second repository, and a study of the need for a monitored retrievable storage (MRS) facility. Further, we urge DOE and Congress to take appropriate action to ensure timely completion of a permanent waste disposal program and ask that an equitable share of the cost of the program for defense waste be calculated so that such fees will be collected as soon as possible. Thus, we ask the subcommittee to approve a $725 million appropriation level so that DOE can move ahead with the NWPA and put the waste program back on track.

The nuclear waste program is solely funded by nuclear utility contributions obtained from ratepayers. To date, utilities have paid $2.7 billion into the program. Ratepayers' money continues to go into the nuclear waste fund, and yet there is doubt as to whether the program can advance in a timely manner so that DOE can begin accepting nuclear waste.

The NWPA requires that once the President determines a separate defense waste repository is not necessary, the federal government contributes its share to the nuclear waste fund. In 1985, the President made such a decision. As yet, DOE has not devised an equitable formula to recover costs for Department of Defense waste. We ask this subcommittee, as it considers the appropriate level of funding for the program, to urge DOE to devise a formula for calculating defense waste fees so that an equitable share of the cost of the program for defense waste will be determined and collected as soon as possible.

Again, we emphasize that it is important for the nuclear waste program to move ahead. APPA believes that further delays in implementing the nuclear waste program will jeopardize the future of the NWPA, destroy public confidence in the ability of the government and industry to provide a permanent solution for nuclear waste, and create uncertainty for utilities now accumulating waste in on-site storage facilities.

Uranium Enrichment

The Department of Energy has requested $1.07 billion for its uranium enrichment activities for FY 1988. The uranium enrichment program has encountered serious problems over the past several years. It has been squeezed by foreign competition and lower-than-projected nuclear power use. Currently, DOE is the highest priced supplier of enrichment services at about $119 per SWU.

Two issues addressed in the uranium enrichment budget request of concern to APPA are claims of unrecovered government costs and funding for advanced uranium enrichment technology.

DOE is calling for recovery from utility customers of $3.5 billion claimed to represent prior unrecovered government enrichment service costs. DOE's budget expects to recover $231 million in FY 1988 in partial repayment of unrecovered government costs.

APPA rejects this claim. Civilian utility customers have already paid for enrichment services through prices set on the basis of recovery of government costs. Part of DOE's estimate is based on an unusual accounting method of defining assets as debts, charging civilian customers for defense usage of enrichment services, and imputing interest on prior appropriations regardless of revenue receipts. DOE cannot support this claim, and we urge this subcommittee to disallow the $231 million in DOE's budget request.

Second, DOE is not requesting funding for the Atomic Vapor Laser Isotope Separation process. This technology is expected to offer enrichment services at less than $40 per SWU. If the U.S. is to once again become competitive in the world market for enrichment services, then it is imperative that more cost-effective enrichment technology be developed. Recognizing this, APPA calls for continued federal support for research and development of enrichment technology. Last year, $80 million was appropriated for the AVLIS program. We urge this subcommittee to continue funding at an adequate level, estimated to be between $80-$100 million, to sustain development of this advanced technology.

Nuclear Regulatory Commission

The NRC budget request for FY 1988 is $427.8 million. Under the Consolidated Budget Act of 1985, NRC is authorized to collect up to 33 percent of its budget through user fees. For FY 1988, the Administration is requesting that NRC collect up to 50 percent or $213.9 million from user fees.

APPA opposes an NRC user fee increase above 33 percent of its budget. While it is appropriate for a certain portion of the cost of regulating the nuclear industry to be paid by assessing nuclear utilities for specific services rendered, APPA believes it is not fair for ratepayers of nuclear utilities to fund a disproportionate share of NRC costs. NRC's responsibilities include ensuring that civilian uses of nuclear materials and facilities are consistent with public health and safety, environmental quality, national security, and antitrust laws. Thus, certain benefits of NRC regulation accrue to the public at large and should be funded through federal appropriations, not simply by the ratepayer. In addition, APPA believes that any user fee should be tied to the specific regulatory service provided rather than having a flat fee arbitrarily set to recoup budget expenses.

NRC faces significant challenges this year, not the least of which is its proposed rule regarding offsite emergency planning at nuclear power sites. The proposed rule would allow NRC to issue a full-power operating license when a state or local government refuses to cooperate in developing offsite emergency plans after NRC has determined that emergency planning for a facility is feasible.

APPA supports the proposed rule. At issue is whether a state or a local government can veto the Commission's decision to issue an operating license by refusing to participate in emergency planning.

APPA urges the subcommittee in appropriating NRC's funds to reaffirm NRC's primary jurisdiction in regulating nuclear power, including emergency evacuation plans necessary for the public's health and safety.

Tennessee Valley Authority

The Administration has requested $72.7 million for TVA's nonpower FY 1988 budget -- more than a 25 percent decrease from the current year's appropriations level of $100 million. While not applicable to the TVA power system, which is financed by revenues from power sales, the nonpower budget reductions will eliminate numerous programs of importance to the nation. Program categories affected include economic and community development, natural resources, agricultural development, general services, and fertilizer demonstration.

Specifically, the proposed budget cuts would: eliminate the economic and community development program which trains workers for new jobs, and assists communities in the seven-state region to recruit new industry and businesses; restrict water quality studies and floodplain management, and terminate reclamation in the Ocoee River Basin and technical assistance to counties developing groundwater protection plans; reduce funding for Land Between the Lakes recreation area and stop operation of all recreational areas not on TVA dams; reduce fertilizer and agricultural programs, which include nationwide testing, technology transfer, and demonstration; and terminate 400 TVA jobs.

TVA is more than an electric utility. It operates under a broad charter to carry out activities of regional and national benefits. TVA's nonpower budget has been substantially reduced every year for the last several years. We urge this subcommittee, as it has done in the past, to reject the Administration's cuts and appropriate funds, estimated to be in a range of $113 million to $120 million, to sustain the level of service provided by TVA last year.

STATEMENT OF DR. FRANK E. HORTON, PRESIDENT, UNIVERSITY OF OKLAHOMA

Mr. Chairman:

A HISTORICAL PERSPECTIVE OF THE UNIVERSITY OF OKLAHOMA'S ROLE IN ENERGY EDUCATION

Early in its history, The University of Oklahoma established itself as a leader in the field of energy. Geology became recognized as important to exploration for oil in about 1913. During the teens many OU geology graduates were involved in significant discoveries of oil in Oklahoma and the mid-continent region, and the Department of Geology at OU rapidly developed a national reputation as an important "petroleum geology" department. This was a period of exceptional development in the department. In 1915, the department offered the first course ever taught in a university in petroleum geology. The founding meeting of an organization later to be called the American Association of Petroleum Geologists took place on the campus in 1916, under the sponsorship of the chairman of the Department of Geology. Two of our graduates in Geology revolutionized the search for the earth's oil. Everett Lee DeGolyer first applied the science of geophysics to the search and J. Clarence Karcher developed reflection seismography.

In 1924, the University of Oklahoma established the first Department of Petroleum Engineering. The University's program in Petroleum Land Management was one of the earliest established and its famed Oil Well Blowout Prevention School is only the second in existence. Through the years, The University of Oklahoma has produced more graduates in geology, geophysics, and petroleum engineering than any other university.

THE PLANNING AND CONSTRUCTION OF THE ENERGY CENTER

In 1981, the University made a decision to build upon this strength. A commitment was made to construct what the University believes will be the world's pre-eminent Energy Center.

The Energy Center will make possible an interdisciplinary approach to both teaching and research and provide for interaction with industry. The facility will provide researchers with the highly technical equipment and modern laboratories in which they can seek solutions for today's problems and for those of the future. It will provide classrooms where the best of the nation's young minds can be educated.

From its very beginning, the Energy Center has been a cooperative effort between the university, state and private sectors. We have already received and expended $15 million from the state and another $18 million out of $21 million in committments from the private sector to construct the $45 million project. The private sector also has contributed another $6 million to support laboratories and professorships housed in the Energy Center.

The 340,000 gross square foot facility consists of two below ground levels, a ground level, and a thirteen story tower. The core, below ground level, of 160,000 square feet is completed. The faculties from Geology and Geophysics, Petroleum and Geological Engineering, and Chemical Engineering and Materials Science moved into the facility in July of 1986. Classes are being held there and more than 200 laboratories are in operation. A second major phase of the project consisting of 100,000 square feet has been under construction since July of 1986 and is now 50% complete. The final phase will consist of a thirteen story tower which contains the final 80,000 square feet of the facility.

THE ENERGY CENTER'S COMMITTMENT TO THE RESEARCH NEEDS TO ADDRESS THE NATION'S FUTURE ENERGY REQUIREMENTS

Background

Initially the focus of the Center will be on fossil fuels because of the current role of these fuels in meeting the nation's needs. Fossil fuels presently supply more than 90 percent of the Nation's total energy requirements. Projections of future supplies by the U.S. Department of Energy, the National Petroleum Council, and others indicate that fossil fuels must continue to supply more than three-quarter's of our needs well into the 21st century. Moreover, the present mix of petroleum at more than 40 percent, coal at 25 percent, and natural gas at 20 percent is not likely to change substantially.

Unfortunately, the Nation is facing increasing difficulty in meeting its petroleum needs from domestic sources of supply, and thus is relying upon ever larger imports of crude oil and refined petroleum products to meet growing demands. Similarly, although there is at present a surplus of natural gas in the market place, future supplies are likely to be substantially more expensive because future reserves will of necessity be developed in deeper sedimentary basins. Finally, although coal is present in sufficient quantities in the U.S. to meet its share of energy needs for well beyond the 21st century, there are growing national concerns over the issue of atmospheric loading from coal combustion.

Research Needs

The Nation's proved reserves of crude oil have decreased substantially during the last decade because new discoveries have not kept pace with production. In fact, most of the reserve additions have come from additional drilling in existing fields and from revisions of existing field reserves. However, it should be emphasized that the Nation is not running out of oil. There exists in the more than 100,000 fields and reservoirs in the United States more than 300 billion barrels of remaining crude oil. This is almost twice as much as the Nation has produced since the first commercial well was drilled in 1859. Of that figure, more than 25 billion barrels are present in Oklahoma.

A substantial research effort is needed in all aspects of enhanced oil recovery. Basic to this effort is the development of a thorough understanding of the petroleum reservoir. This will require studies of inhomogeniety, fluid-rock interaction, and fluid dynamics in a multi-phase flow regime. In concert with this effort is the need to refine existing and develop new approaches to measure a variety of reservoir parameters using a variety of existing and new remote sensing techniques.

Natural gas has the capability to contribute importantly to the Nation's future energy needs if ways can be found to reduce the costs of drilling, completing, and sustaining production from deep natural gas reservoirs. An important component of this effort is the need for basic research in rock mechanics directed toward improved drilling and completion technologies. Similarly, improved understanding of reservoir properties will permit the development of production strategies to maximize the recovery of natural gas and thus reduce the overall cost of the operation. Since petroleum and natural gas have similarities in occurrence, substantial synergies can be achieved in a combined research effort on these two fossil fuels.

Coal is abundant in supply throughout most of the U.S. but highly variable in its physical and chemical properties. Moreover, the combustion of coal is contributing substantially to problems of atmospheric loading with the consequent increase in acid precipitation. Research is needed in developing improved ways to blend coals to optimize conventional combustion methodologies as well as to develop alternative combustion techniques. Such efforts will require the development of generic coal blending models based upon a comprehensive understanding of the physical and chemical properties of coals. In addition, that understanding will provide important information that can be used in developing alternative combustion strategies.

The Energy Center

The development of the Energy Center at the University of Oklahoma provides an exceptional opportunity to contribute important research toward meeting the Nation's future energy needs. The University's long and distinguished history in petroleum education and research provides an indepth understanding of the issues that are virtually unequalled in the Nation. The close working relationship that the University has enjoyed with both industry and government in this area provides the framework for successful research in contributing importantly to our future energy needs.

The Energy Center is designed to promote interdisciplinary research involving a large range of needed activities and skills. An example of this success is the work involving the role of micro-organisms in enhanced oil recovery. In this effort faculty members from the Department of Botany and Microbiology have teamed up with colleagues in the School of Petroleum and Geological Engineering to accomplish important research results in understanding the role that micro-organisms can play in enhanced oil recovery. Likewise, faculty in the School of

Geology and Geophysics have teamed up with representatives from the School of Aerospace and Mechanical Engineering to investigate rock mechanical properties leading to improvements in drilling and completion technology. Furthermore, work in the Departent of Chemistry, the School of Geology and Geophysics, the School of Petroleum and Geological Engineering, the School of Chemical Engineering and Materials Science, and the Oklahoma Geological Survey is contributing to improved understanding of petroleum reservoirs through a variety of research efforts that are being coordinated through the Energy Center. Finally, efforts being conducted jointly between the Geological Information Systems program and the Oklahoma Geological Survey that are developing important data bases to permit the analysis of new enhanced recovery methodologies and procedures on Midcontinent oil and gas fields.

In the future, the focus of the Energy Center will turn to alternate sources of energy. However, a number of projects in these areas already have begun. One faculty member has done pioneering work in the field of geothermal energy. Another is working with the National Oceanic and Atmospheric Administration in a significant wind energy study. Other fields which can be studied are solar, nuclear, and hydro energy.

SUMMARY

America's growing dependence upon crude oil imports is certain to produce another crisis similar to that which developed following the 1973 oil embargo. Indeed, it seems likely that the next situation will be more serious. Current conditions in the domestic energy industry are such that exploration and development are almost at a standstill and our domestic production capital is rapidly falling. This means increasingly greater reliance upon sources which are both costly and insecure. Additionally, within the last few months, the domestic energy industry has shut down a large portion of their research and development programs. Large numbers of research scientists have been laid off and a number of laboratories closed.

The University of Oklahoma has undertaken to construct a world class Energy Center for research and education. The Center will cost about $45 million. Approximately 50 percent of construction costs are being provided by the private sector and 33 percent by the State of Oklahoma.

Original plans were to build the Center with only state and private contributions. However, current economic conditions in the energy industry have made this goal unattainable. In spite of aggressive efforts, $9 million remains to be raised.

A partnership of the private sector, the state, and the federal government is most appropriate. The scientific and research focus of the Energy Center is the technological advancement of domestic energy production, national security, and the protection of the environment. The Energy Center will provide research critical to such areas as enhanced oil recovery and the necessary technology to drill deep gas. Approximately 25 percent of the Center will be used by scientists and researchers involved in projects related to federal agencies including the Departments of Energy, Interior, Commerce and Defense.

The purpose of this testimony is to request an appropriation in the amount of $9 million or 20% of the cost to conclude this Energy Center. These funds will be used only for construction and equipment with no federal funding reqested for operations. This request has the concurrence of the entire Oklahoma delegation.

In summary Mr. Chairman, 60 percent of all the crude oil discovered in the United States since the first well was drilled in Pennsylvania in 1859 has yet to be recovered. With the technologies we can develop at this facility we can recover over time a significant proportion of those reserves. Thus the Energy Center will repay this appropriation many times over through the contributions it will generate that help assure economical, dependable, domestic sources of energy to meet the future needs of this nation.

Enclosed is a fact sheet on the Energy Center and a photograph of its model.

We thank the distinguished Chairman and Members of the Subcommittee on Energy and Water Development for their consideration of our sincere request for assistance.

Fact Sheet

THE UNIVERSITY OF OKLAHOMA ENERGY CENTER

The Physical Facility

- --340,000 gross square feet
- --207 teaching and research laboratories and 4 libraries
- --located on a seven-acre site
- --planned as an energy-efficient structure
- --core area in lower two levels

Funding for Construction of the Energy Center

Private funds received	$18,000,000	
Private funds committed and currently being paid	3,000,000	
Total Private Funding		$21,000,000
State funding received from the State of Oklahoma		15,000,000
TOTAL FUNDING TO DATE		$36,000,000
Federal Funding requested from Supplimental Fiscal 1987 Budget or Fiscal 1988 Budget		9,000,000
TOTAL CONSTRUCTION, FURNISHINGS, & EQUIPMENT COST		$45,000,000

Other Funding Contributions for the Energy Center

$ 3.35 million in gifts and pledges for endowments
$ 2.425 million in gifts and pledges for equipment

Research Units in the Energy Center

Oklahoma Geological Survey
Energy Resources Institute
Science and Public Policy Program
Cooperative Institute for Mesoscale Meteorological Studies
Cooperative Institute in Applied Remote Sensing
The GEOSAT Committee, Inc.
Applied Systems Institute

Disciplines in the Energy Center

- College of Geosciences
  - Geology and Geophysics
  - Geochemistry
  - Geography
  - Meteorology
- College of Engineering
  - Petroleum Engineering
  - Geological Engineering
  - Chemical Engineering and Materials Science

Related Disciplines Involved in the Energy Center

Civil Engineering
Electrical Engineering and Computer Science
Industrial Engineering
Mechanical Engineering
Petroleum Land Management
Oil and Gas Law
Energy Economics
Chemistry
Mathematics
Physics

Specialized Research Laboratories

Computing Laboratory for research in seismic data and processing data from satellites
Computer-Aided Design and Manufacturing Laboratory
Petroleum Engineering Production Laboratory
Civil Engineering Environmental Laboratory
Thermodynamics Laboratory
X-Ray Diffraction & Fluorescence Laboratory
Rock Mechanics Laboratory
Perry Laboratory for Gaseous Fuels Research and Teaching

Related Facilities Located in Norman

- National Severe Storms Center
- Major Meteorological Center
  - National Weather Service lead state forecast office
  - Next Generation Radar (NEXRAD) Operational Support Facility with a $1 million Doppler radar for National Weather Service, Federal Aviation Administration, and Department of Defense
- Satellite Ground Station
  - $10 million station, being built by the Earth Observation Satellite Co. (EOSAT) to receive data from LANDSAT
- Oil Well Blow-Out Prevention School

Representative Corporate and Foundation Donors

- Atlantic Richfield Foundation
- Cities Service Company
- Conoco Inc.
- Dresser Foundation, Inc.
- Halliburton Foundation
- Helmerich & Payne, Inc.
- The Kerr Foundation
- MAPCO, Inc.
- Mobil Oil Corporation
- The Louisiana Land & Exploration Company
- Oklahoma Gas & Electric Co.
- ONEOK, Inc.
- Phillips Petroleum Company
- Panhandle Eastern Corporation
- Shell Oil Company
- Sun Company, Inc.
- Tenneco, Inc.
- Texaco Philanthropic Foundation
- United Energy Resources
- The Western Companies of North America
- The Williams Companies

STATEMENT OF THE HAWAIIAN ELECTRIC CO.

This written statement is submitted on behalf of Hawaiian Electric Company (HECO) in support of continued appropriations for the Department of Energy (DOE) to permit completion of the Hawaii Deep Water Cable (HDWC) program.

The HDWC program was established to develop high technology submarine power cables that will extend cable designs and applications beyond the current state of the art. The program is funded jointly by the Federal government and the State of Hawaii. HECO is the prime contractor for the HDWC program with Pirelli Cable Corporation and Hawaiian Dredging and Construction Company acting as the principal subcontractors. As stated in the contract between DOE and HECO the primary objective of the HWDC program is:

> To determine the technical feasibility of deploying and operating a submarine power transmission cable between Kohala on the Island of Hawaii and the Makapuu area of Oahu over a service life of at least 30 years.

This objective, if achieved, will represent a significant engineering feat. To date, high voltage power cables have been laid in water depths no greater than 1,800 feet. The cable being developed in the HDWC program will have to be laid in depths of over 6300 ft. Further, the selected route for deploying this submarine cable necessitates that a cable laying system be designed to successfully deploy the cable in seas which typically experience wave heights of eight feet as well as strong winds and ocean currents. This combination of extreme depths (almost 4 times deeper than any existing system); high waves (3 times greater than considered operational by present practice); strong currents and steep bottom slopes make this project substantially more difficult than any other submarine power cable project ever attempted.

Demonstrating the technical feasibility of laying and operating a power cable under the above-stated constraints will represent a significant step toward advancing the state of the art of submarine power cable.

The HDWC program includes two major components:

1. the development and design verification of a reference cable concept, and;

2. the determination of the technical feasibility of laying reference cable on the ocean bottom along a predetermined route with the required accuracy and proper residual tension.

The Hawaii Deep Water Cable Program was authorized originally under the Omnibus Budget Reconciliation Act of 1981. To date, a total of $13.1 million has been appropriated for the program, including $3.7 million in the Fiscal Year 1987 Energy and Water Appropriations bill. The F.Y. 1987 funds are being utilized for laboratory testing of the cable and design of cable laying equipment. This stage is nearing completion and has been successful. The laboratory testing program will simulate all forces the cable will be subjected to during deployment and a subsequent thirty years of operating life. Laboratory testing is expected to fully characterize the cable.

In Fiscal Year 1988, the final phase of the HDWC program -- at-sea testing of a surrogate cable -- should commence. This test is essential in order to demonstrate that it is possible to lay the cable with the accuracy and bottom tension required for the cable to operate successfully over its proposed service life of 30 years. The major tasks to be accomplished are fabrication of approximately 33,000 feet of cable; leasing and outfitting a cable-laying vessel with the additional control equipment required for the at-sea test; preparation for conduct of the at-sea test under actual conditions in the Alenuihaha Channel; and preparation of final reports.

Attachment I to this statement provides a more complete explanation of the work that remains to be accomplished on this program. A description of how the work would be accomplished is also addressed. The program outlined in Attachment I to this statement has been approved by the DOE as the strategy to be followed if funding is made available. Two funding scenarios that would provide adequate funds to complete the program are set forth in this statement. One funding scenario anticipates completion of the program by May, 1989 and the other by May, 1990.

Alternative #1
HDWC FY Funding Requirements
Continuous Program
(X 1,000)

	FY 1988	FY 1989
Operations Planning	50	
Engineering	200	
Control equipment procurement	100	
Vessel porcurement/mods	2,580	
Cable Fabrication	450	
Cable transport	70	
At-sea testing	1,700	
Test report	75	50
Vessel re-mod	1,240	
Cable offload/storage	105	
Lab test mods	250	
DOE technical support	270	150
HECO technical support	190	40
Program administration	500	320
Contingency	500	—
FY Totals	8,280	560

Total $8,840

"Alternative 1", shown above, strictly follows a critical path program analysis. It is the most efficient and cost-effective way to complete the program. The total cost for program completion under this alternative is $8.84 million.

"Alternative 2", shown below, recognizes that federal budget constraints may prohibit the appropriation of total funding for the project in one fiscal year. It is important to note, however, that the procurement of expensive material and equipment (like the vessel) cannot be divided and this places severe constraints on attempts to partially fund the program over a number of years. Also, please note that the splitting of funding under Alternative 2 increases the total cost for the program by roughly $0.6 million. The price increase is a direct result of extending operation of the program for an additional year.

Hawaiian Electric Company urges the Members of this Subcommittee to support the appropriation of funding to conduct the at-sea testing phase and complete the HDWC program. Completion of the HDWC program will not only make possible the development of up to 500 MW of geothermal power in Hawaii but will significantly advance the ability of the United States to compete in the submarine power cable business. In addition, the program has offered, and will continue to offer, opportunities for important technology transfer. Attachment II of this statement provides a detailed explanation of several technology transfer opportunities.

Continued federal financial commitment to this program would be a national investment in our technology future and we ask your support for this important endeavor.

Alternative #2
HDWC FY Funding Requirements
Balanced Appropriations
(X 1,000)

	FY 1988	FY 1989	FY 1990
Operations planning	50		
Engineering	200		
Control equipment procurement	100		
Vessel procurement/mode	2,580		
Cable fabrication	450		
Cable transport		70	
At-sea testing		1,700	
Test report			125
Vessel re-mod		1,240	
Cable offload/storage			105
Lab test mods	250		
DOE technical support	200	220	60
HECO technical support	190	40	20
Program administration	500	500	320
Contingency	250	250	
FY Totals	4,770	4,020	630

TOTAL $9,420

Program completed May 1990

ATTACHMENT I

EXECUTIVE SUMMARY

A. INTRODUCTION

The Hawaii Deep Water Cable (HDWC) Program, established by the U.S. Department of Energy (DOE), is part of the DOE goal of developing high technology submarine power cables to extend cable design and application beyond the present state of the art. The HDWC program relates to this development through its primary objective:

> "To determine the technical feasibility of deploying and operating a submarine power transmission cable between Kohala on the Island of Hawaii and the Makapuu area of Oahu over a service life of at least 30 years."

The significance of the engineering challenge of this objective is recognized when comparing the maximum water depth of the HDWC concept - 1920 m - to the maximum depth power cables have been laid - 550 m. The successful determination of the technical feasibility of laying and operating a power cable at this great depth would represent a significant step in advancing the state of the art.

The HDWC program objective includes two major elements:

1. the development and design verification of a reference cable concept, and;
2. the determination of the technical feasibility of laying the reference cable on the ocean bottom along a predetermined route with the required accuracy and proper residual tension.

The first element involves the fabrication and laboratory testing of a reference cable design concept. This task is presently underway; the cable has been manufactured and laboratory facilities are being assembled. This work is described in Reference 6.8 and is not covered by this report.

The second element involves a series of tasks including surveys, analysis, and at-sea tests. More specifically, these tasks include:

1. surveys of waves, winds, and currents (surface and water column) in the Alenuihaha Channel.
2. dynamic analysis of the cable and cable vessel motions to determine expected maximum cable tensions.
3. sensitivity analysis of parameters affecting accuracy of cable placement and tension.
4. scaling analysis to determine acceptable configurations of cables and laying equipment for an at-sea test.
5. survey of existing cable vessels and cable handling equipment.
6. conceptual design of an at-sea test including vessel, cable equipment, cable and control/navigation system.
7. at-sea test planning.
8. conduct of at-sea test.

This report summarizes the above technical studies and analysis, evaluates the different equipment and system alternatives considered, and concludes with a recommended conceptual design of the at-sea test. This work was funded under DOE Contract DE-AC01-82CE76214.

B. CONCLUSIONS

The major conclusions of the work reported herein are summarized below:

1. Determination of the technical feasibility of deploying a submarine cable along the selected route requires determination of the ability of the cable laying system to:
    a. Accurately position the cable on the channel bottom within specified tolerances.
    b. Control the residual cable tension on the ocean floor within specified tolerances.
2. Oceanographic surveys of waves, winds and currents in the Alenuihaha Channel have determined that the cable laying system should be designed to perform adequately in seas of

significant wave height of 2.4 m (8 ft), and a complex current profile through the water column with a maximum surface speed of 1.5 m/s (3 kts).

3. Bathymetric surveys have led to the selection of a reference cable route between Hawaii and Oahu with the Alenuihaha Channel presenting the most challenging cable-laying conditions. These conditions include the extreme depth of 1920 m (6300 ft) and 20 to 30 degree slopes with irregular, rough bottom topography - particularly difficult on the Maui and Kohala slopes of the Alenuihaha Channel. The reference cable path has the following worst case characteristics at specific locations along the path:
   a) The placement of 3 power cables parallel to each other within a total path width of 80 m (262 ft) at a depth of 1200 m (4000 ft) over a distance of 350 m (1148 ft) on the Maui slope.
   b) The placement of 3 power cables parallel to each other along a curved path with a radius of curvature of approximately .65 km (0.4 mile) on the Maui slope.
   c) The control of cable bottom tension to under 1000 kg (2205 lb) on the Kohala slope.
4. Cable handling equipment and cable vessel requirements are a matter of established industry design practices and require no advances in the state-of-the-art. Therefore, design and fabrication of such equipment is not pertinent to the determination of technical feasibility. However, the integrated navigation and control/instrumentation requirements have not previously been commercially attempted at great depths with the accuracy required of the HDWC concept.
5. The large tensions predicted when deploying the reference design cable - designated PCC #116 - in 1920 m (6300 ft) of water would require designing and building special cable handling equipment not presently available (see Section E for description of cable #116).

6. The approach that combines both computer simulation and at-sea tests is necessary to adequately determine the technical feasibility of the HDWC concept.
7. A lighter weight, smaller diameter "surrogate" cable can be used as a scale model of PCC #116 if static and dynamic similarity of the cable forces is preserved. The reduced weight will allow use of existing cable vessels and handling equipment. Non-electric grade power cable and twist resistant wire rope have been identified as suitable surrogate cables.
8. An at-sea test, designed with the aid of computer simulation, utilizing a surrogate cable, existing cable vessels and cable-handling equipment, and a unique integrated navigation and control/instrumentation system developed on this program can determine the technical feasibility of controlling cable tension and bottom positioning at a considerable savings in cost over the at-sea test utilizing PCC #116 cable. An at-sea test utilizing a surrogate cable is estimated to cost $6 million compared to $17 million for an at-sea test using PCC #116.

C. RECOMMENDATIONS

This report recommends conducting an at-sea test in the Alenuihaha Channel utilizing a unique control system, a surrogate cable, an existing cable vessel and cable handling equipment to meet the program objective. The at-sea test involves laying the surrogate cable along the most difficult and deepest parts of the HDWC proposed cable route. A minimum of two lays are proposed: one in the narrowest portion of the route and the other where the lowest residual tension is required. Measurements to determine the degree of accuracy of cable placement and cable tension will enable the HDWC Program to determine the technical feasibility of advancing the state of the art of submarine power cables.

This report requests approval of the recommended conceptual design and continuation into the detail design phase of the at-sea test.

D. SITE ENVIRONMENTAL CONDITIONS

Fig. 0.1 depicts the preferred route of the entire cable system from Hawaii to Oahu. The Alenuihaha Channel, between the Islands of Hawaii and Maui, presents the most challenging technical aspect related to the deployment of the HDWC concept (Ref. 3.1). The bathymetry of the Alenuihaha Channel (Fig. 0.2) can be characterized as a deep canyon with fairly steep and rough slopes. The Kohala side of the channel has a gradual slope from the Island of Hawaii leading to a steep drop-off (30%) to the relatively smooth channel bottom. Although only 46 km (26 mi) wide, the combination of extreme depths of 1920 m (6300 ft), bottom slopes, high winds, waves, and currents make it unlike any other submarine power cable laying project ever attempted. The maximum installation depth is almost four (4) times deeper than any existing system and the design significant wave heights are three (3) times greater than considered operational by present practice (Ref. 7.2).

The meteorological and oceanographic conditions in the Alenuihaha Channel (Table 0.1 and Fig. 0.3) determine the operational requirements of the cable laying vessel while the cable characteristics, bottom bathymetry, roughness and slopes determine the cable laying accuracy and the allowable unsupported spans and tensions of the cable as it lies on the bottom.

Extensive bathymetric surveys including bottom photography were carried out in 1985 and 1986 to identify the route across the Alenuihaha Channel. The cable route, shown in Fig. 0.4 and summarized in Table 0.2, was determined to produce no unacceptable cable spans or bend radii at reasonable bottom cable tensions. This route could accommodate the laying of three cables.

The sections of the Alenuihaha Channel that present the most difficult submarine terrain are the Kohala slope (the steepest at 30°) between 900 m (2953 ft) and 1200 m (3937 ft); and the Maui slope between 1000 m (3281 ft) and 1300 m (4265 ft). The Maui slope path curves and has the narrowest section of the path (80 m

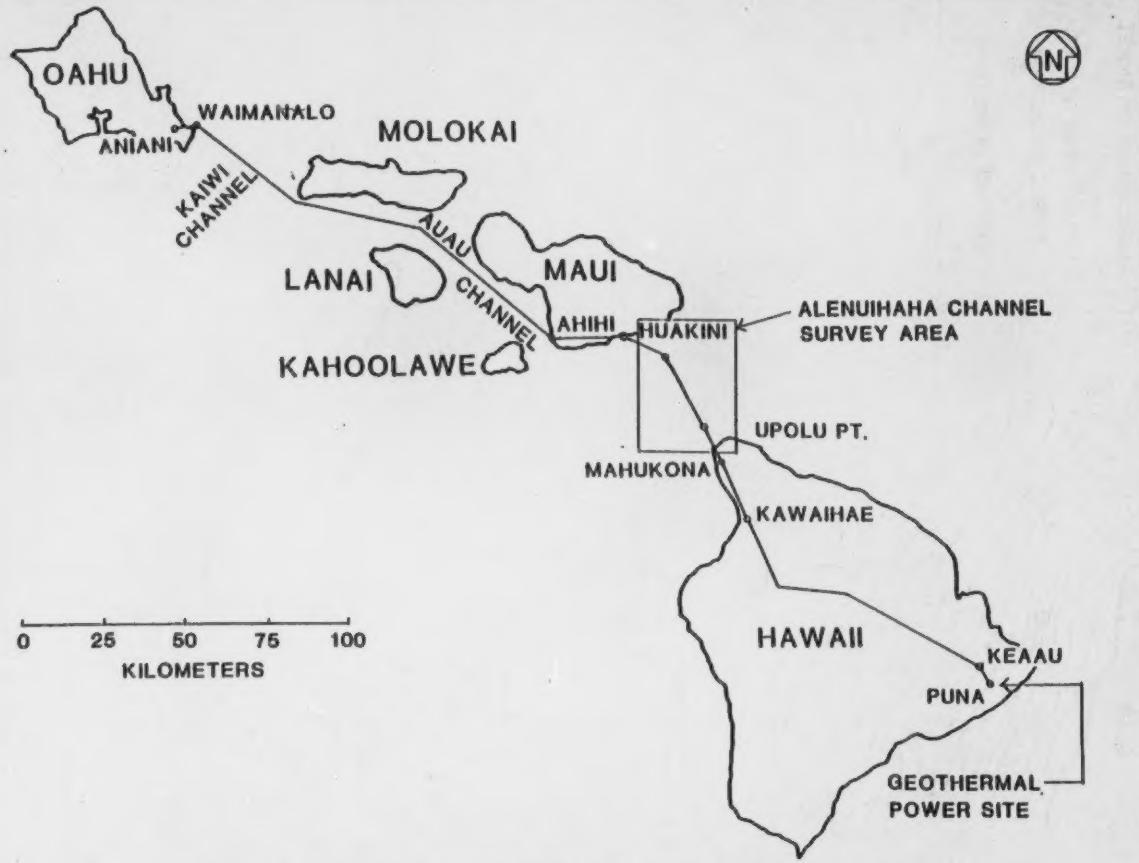

OAHU
WAIMANALO
ANIANI
KAIWI CHANNEL
MOLOKAI
AUAU CHANNEL
LANAI
MAUI
KAHOOLAWE
AHIHI
HUAKINI
ALENUIHAHA CHANNEL SURVEY AREA
UPOLU PT.
MAHUKONA
KAWAIHAE
HAWAII
KEAAU
PUNA
GEOTHERMAL POWER SITE
N
0
25
50
75
100
KILOMETERS

FIGURE 0.1 PREFFERED HAWAII DEEP WATER CABLE ROUTE (FROM REF. 2.1)

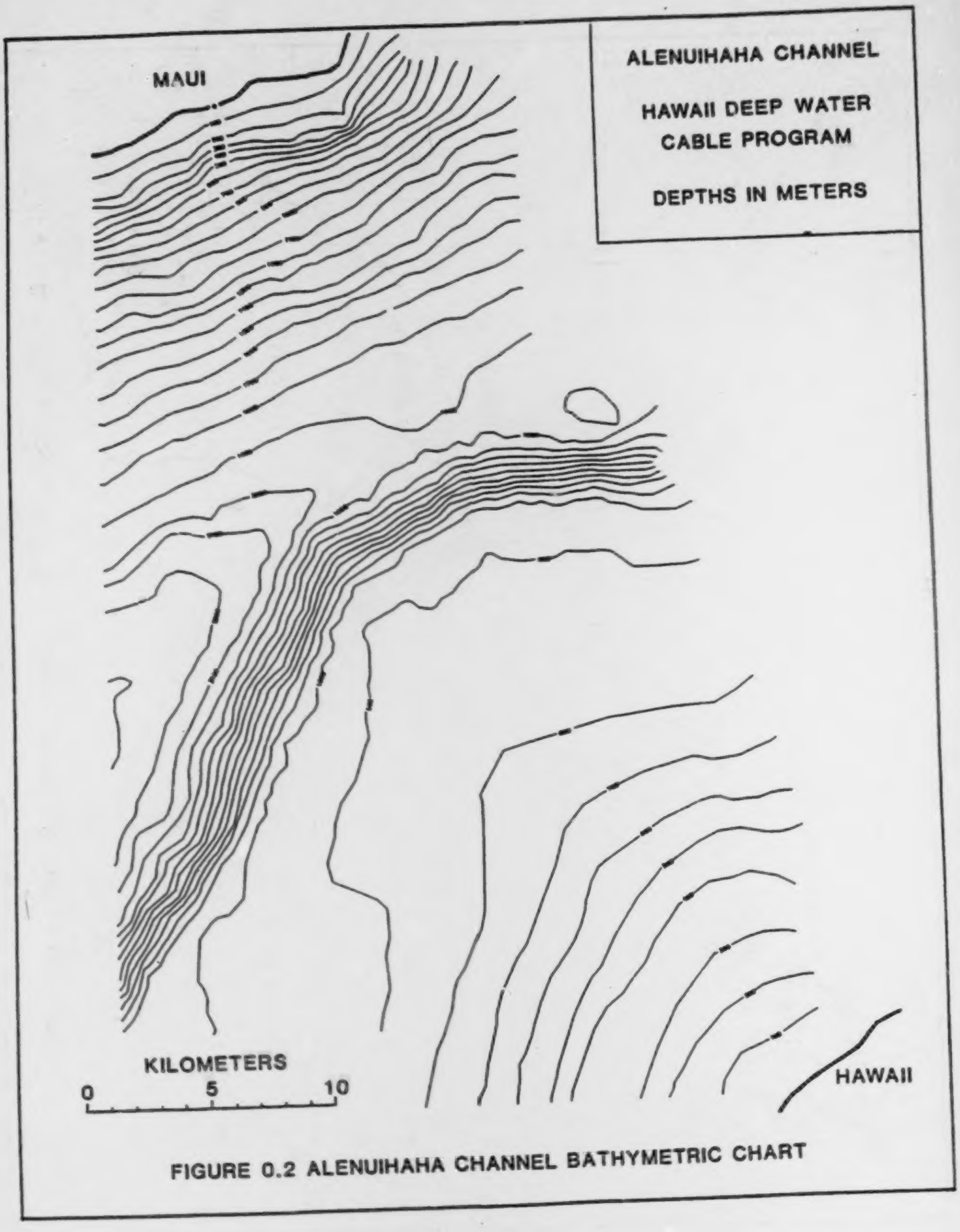

ALENUIHAHA CHANNEL
HAWAII DEEP WATER CABLE PROGRAM
DEPTHS IN METERS
MAUI
HAWAII
KILOMETERS
0
5
10

FIGURE 0.2 ALENUIHAHA CHANNEL BATHYMETRIC CHART

TABLE 0.1 DESIGN OPERATIONAL WIND, WAVE AND CURRENT CONDITIONS IN THE ALENUIHAHA CHANNEL (From Ref. 5.2)

WINDS: (sustained, exceeded 5% of the time)

Tradewind condition	30 kts from ENE
Kona wind condition	25 kts from WSW

WAVES: (significant wave height, exceeded 10% of the time)

Month	H_s (m)	T (s)
Jan	2.6	4-10
Feb	2.9	6-10
Mar	3.4	4-8
Apr	3.0	4-8
May	2.4	4-6
Jun	1.9	4-6
Jul	2.0	4-6
Aug	2.1	4-8
Sep	1.9	4-10
Oct	2.3	4-8
Nov	2.7	4-8
Dec	3.0	4-8

CURRENTS: (typical maximum current components)

Location	Bottom Depth(m)	(1) Tidal Speed (cm/s)	(2) Tradewind Driven (cm/s)	(3) Eddy Speed (cm/s)	(3) Eddy Dir (°T)
Offshore Upolu Pt	170	46	33	70	45
	500	43	33	65	50
	800	39	33	54	50
Top of Kohala Slope	900	37	33	45	50
	1000	39	33	44	50
	1600	46	33	40	50
Bottom of Kohala Slope	1900	41	33	38	60
	2000	36	33	34	80
	1500	45	33	25	115
Maui Slope	900	53	33	20	125
	200	55	33	16	130

(1) Peak tidal currents can flow towards ENE or WSW, generally perpendicular to contours. Typical direction is 70°T/250°T along cable path. Uniform over entire depth.

(2) Surface current direction is towards WNW, deflected clockwise with depth. Speed decreases exponentially with depth; negligible at 200 m depth for 30 kt wind.

(3) Eddy current speed constant 0-50 m, decreasing linearly to 0 at 200 m depth.

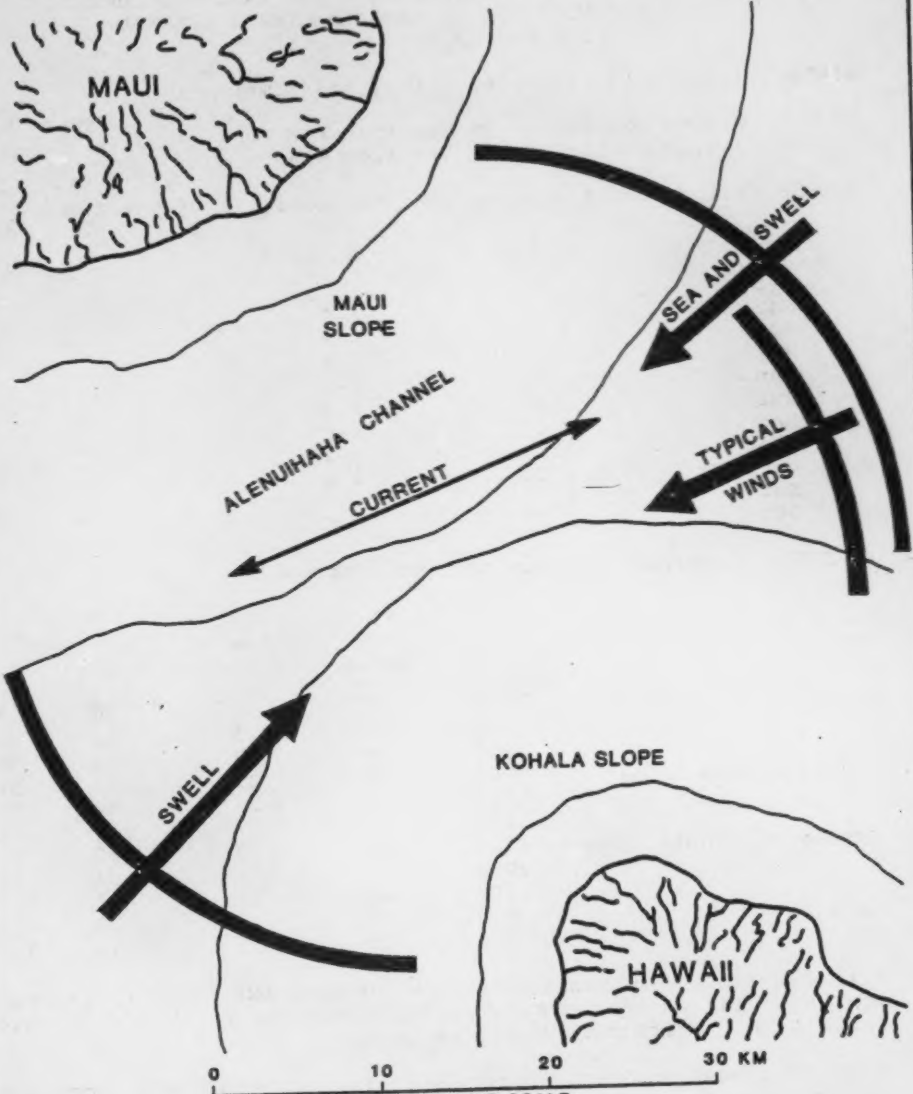

MAUI
MAUI SLOPE
SEA AND SWELL
ALENUIHAHA CHANNEL
CURRENT
TYPICAL WINDS
SWELL
KOHALA SLOPE
HAWAII
0
10
20
30 KM
APPROXIMATE SCALE

FIGURE 0.3 REPRESENTATIVE ALENUIHAHA CHANNEL OCEAN ENVIRONMENT

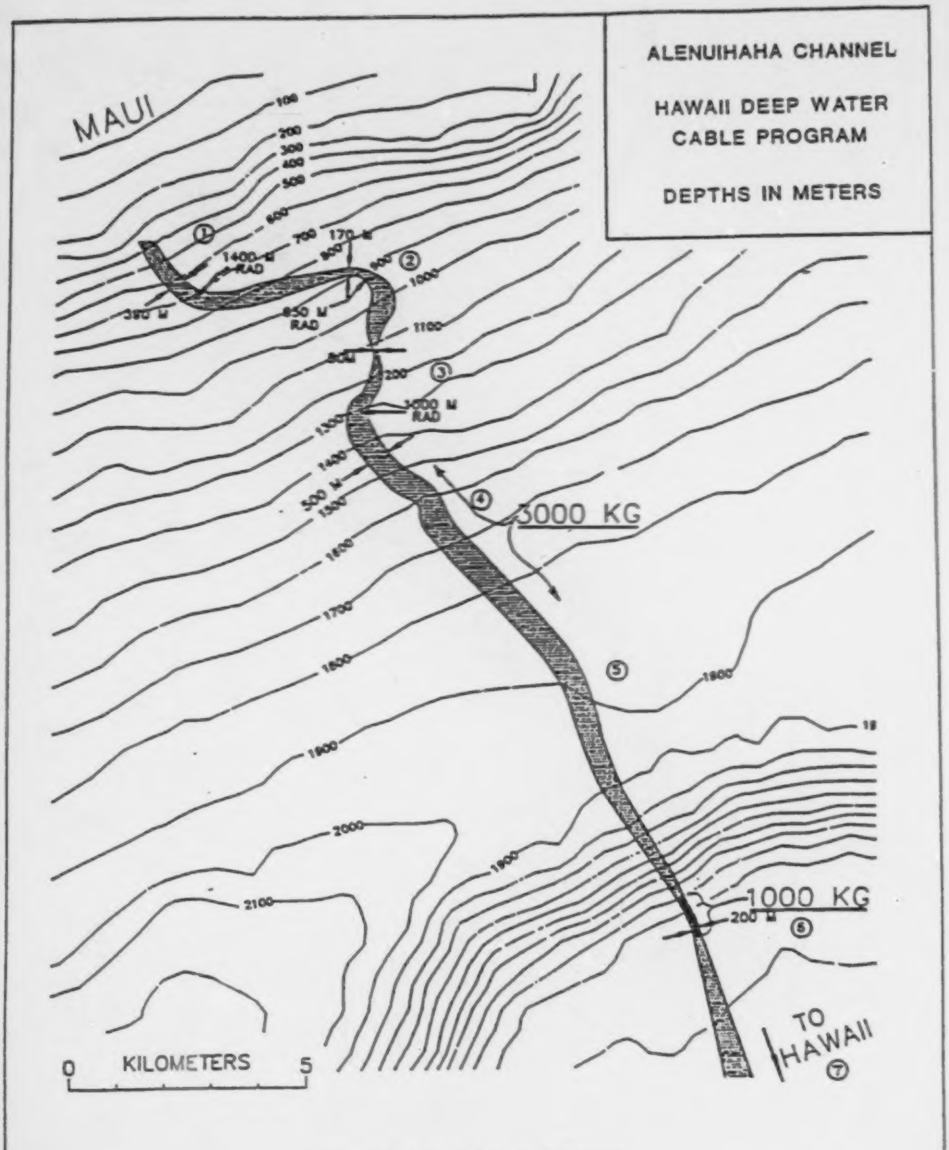

ALENUIHAHA CHANNEL
HAWAII DEEP WATER CABLE PROGRAM
DEPTHS IN METERS
MAUI
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
①
②
③
④
⑤
⑥
⑦
1400 M RAD
380 M
170 M
850 M RAD
1000 M RAD
500 M
3000 KG
1000 KG
200 M
TO HAWAII
0 KILOMETERS 5

FIGURE 0.4 CABLE ROUTE

TABLE 0.2 SUMMARY OF ALENUIHAHA CHANNEL CABLE ROUTE

PATH SECT.	PATH MIN. WIDTH	REQD LAY ACCURACY	MAX SLOPE	CURVATURE RADIUS	MAX COMM'L BOTTOM TENSION	MAX CURRENT DIRECTION*	DEPTH	MAX TEST BOTTOM TENSIONS
	(M)	(M)	(DEG)	(KM)	(KG)	(DEG)	(M)	(KG)
1	390	±65	10	1.4	3000	90..30	400..850	1700
2	170	±28	10	0.65	3000	30..150	850..1100	1700
3	80	±13	10	1.0	3000	150..90	1100..1400	1700
4	500	±83	8	10.0	3000	90..80	1400..1700	1700
5	500	±83	4	10.0	3000	80..95	1700..1920	1700
6	200	±33	30	10.0	1000	90..120	2000..900	570
7	500	±83	4	10.0	3000	120..90	900	1700

* Relative to cable direction

(262 ft) over a distance of 350 m (1148 ft)). The cable laying accuracy and tension control required in the these areas is greater than in other portions of the channel (Ref. 4.3).

Large areas have been identified in other portions of the channel that are relatively smooth and do not represent a major challenge to cable laying. These areas include the lower portion of the Kohala Slope, the bottom of the channel, and the shallow region of the Kohala Slope.

Based on the bathymetric survey data, the route shown on Fig. 0.4 is considered to be the best available route across the Alenuihaha Channel and it is unlikely that another equally acceptable route exists.

E. THE SUBMARINE POWER CABLE

The submarine power cable selected as the reference cable design is a high voltage direct current (HVDC), self contained oil-filled (SCOF) type power cable designated PCC #116. This cable was designed by Pirelli Cable Corp. The cable utilizes a hollow core segmented aluminum conductor, paper insulation, lead alloy sheath, bronze tape reinforcement, a semiconductive polyethylene jacket and double galvanized steel flat contrahelically wound wire armor with a polypropylene bedding and outer covering. The cable weighs 27 kg/m (18.2 lb/ft) in water, has an outside diameter of 118.4 mm (4.66 in), and is designed for a maximum tension of 78.7 t. Fig. 0.5 shows a representative cross section of PCC #116. The selection of PCC #116 from 250 proposed designs was the result of an extensive parametric analysis that considered all of the environmental and operational requirements of a reference cable system (Ref. 6.3). See Table 0.3 for PCC #116 mechanical characteristics.

F. CABLE LAYING VESSEL AND EQUIPMENT

A study on deploying cable PCC #116 in commercial lay lengths within allowable mechanical loads in the severe environmental conditions of the Alenuihaha Channel, identified the following

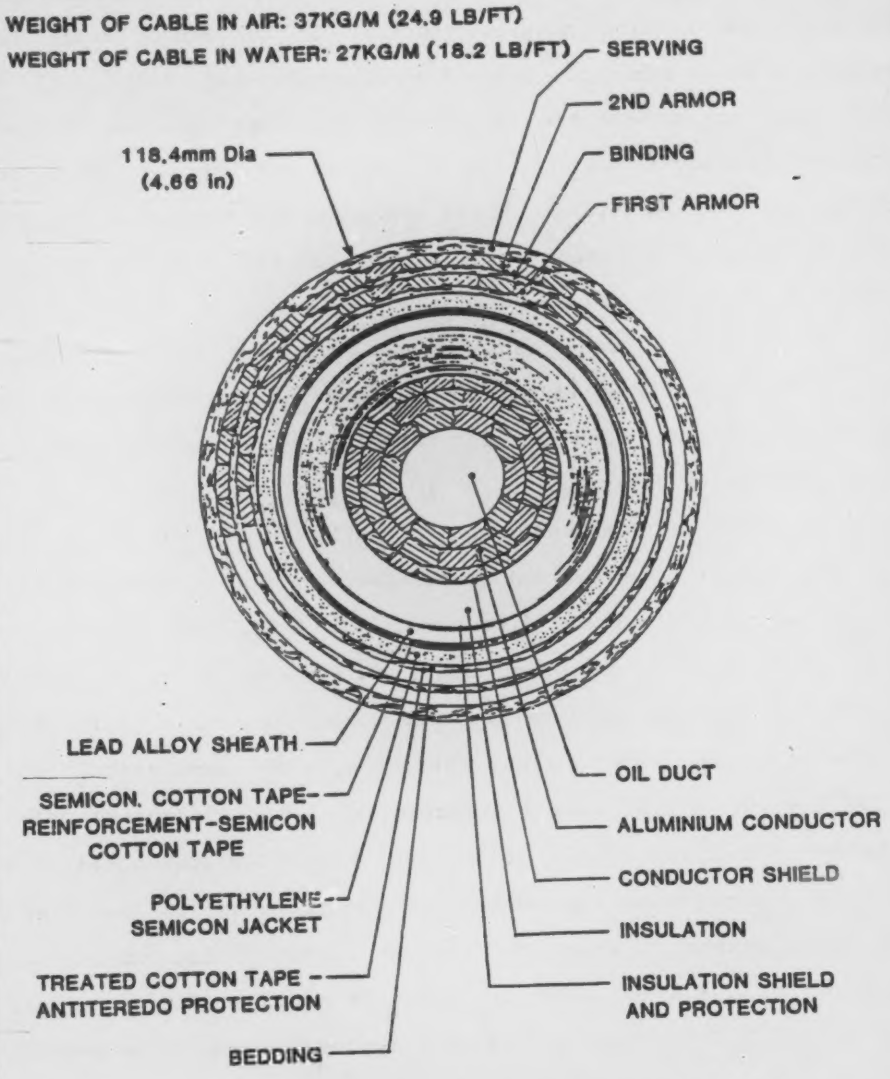

WEIGHT OF CABLE IN AIR: 37KG/M (24.9 LB/FT)
WEIGHT OF CABLE IN WATER: 27KG/M (18.2 LB/FT)
SERVING
2ND ARMOR
BINDING
FIRST ARMOR
118.4mm Dia (4.66 in)
LEAD ALLOY SHEATH
SEMICON. COTTON TAPE-REINFORCEMENT-SEMICON COTTON TAPE
POLYETHYLENE-SEMICON JACKET
TREATED COTTON TAPE - ANTITEREDO PROTECTION
BEDDING
OIL DUCT
ALUMINIUM CONDUCTOR
CONDUCTOR SHIELD
INSULATION
INSULATION SHIELD AND PROTECTION

FIGURE 0.5 CROSS SECTION OF PCC #116 CABLE
(SOURCE: PIRELLI CABLE CORP.)

TABLE 0.3 PCC #116 CABLE DATA

CABLE O.D. (mm)		118.4
WEIGHT (kg/m)	DRY	37
	WET	27
MIN. BENDING (m) DIA.	w/MAX TENSION	12.0
	w/o TENSION	7.0
MAXIMUM ALLOWABLE TENSION (t)		78.7
MAXIMUM ALLOWABLE SQUEEZE (t/m)		5
MAXIMUM ALLOWABLE SHEAR (t/m)		3

major vessel and cable handling equipment requirements (Ref. 7.6 and 9.2):

a. A 122 m x 30 m (400 ft x 100 ft) flat deck vessel to accommodate the cable handling equipment, auxiliary equipment, and control system and to provide a safe working platform for the open ocean environment.

b. A cable vessel with dynamic propulsion and positioning capabilities to be used in conjunction with navigational and control systems to accurately place the cable on the selected cable route with the required residual tension.

c. A linear tensioning machine approximately 30 m (100 ft) long to control the cable tensions during laying while keeping shear stresses on the cable within specified limits.

d. A 12 m (40 ft) diameter overboarding sheave to limit bending of the cable during maximum cable tension conditions.

e. A 21-27 m (70-90 ft) diameter turntable to accommodate an economic lay length (80-96 km [50-60 mi]) of cable.

G. APPROACH TO DETERMINING TECHNICAL FEASIBILITY

The objective of determining technical feasibility of the HDWC program which has been shown to rest on the capability to accurately position and tension the cable is approached through the use of computer simulations to predict performance and design requirements which are then validated by at-sea tests. This approach provides a systematic assessment of the parameters (and their interactions) that affect the performance of the cable laying operations. As noted, much of the survey and simulation work has been completed and what remains is the at-sea test phase.

An at-sea test using the reference cable PCC #116 and the required vessel and handling equipment has been estimated to cost $17 million (excluding the cost of the cable). This high cost suggests the need for an alternative approach to the at-sea test that would meet the test objective at a significantly reduced cost.

An alternative approach which uses a surrogate (lighter weight) cable and existing cable vessel and handling equipment was determined to be acceptable as long as the surrogate cable has a hydrodynamic constant essentially the same as the reference cable PCC #116. This approach will result in an at-sea test with technical difficulty of control of accuracy and tension the same as that which would be experienced with the reference cable #116, but at an estimated cost reduction of almost two-thirds. The following paragraphs discuss the features of the recommended at-sea test.

H. CONCEPTUAL DESIGN OF THE AT-SEA TEST

1. Surrogate Cable

The surrogate cables considered as substitutes for PCC #116 were of two types: non-electric grade power cables and twist resistant wire rope. (See Fig. 0.6) PCC determined the optimum non-electric power cable design to be 69 mm (2.7 in) dia. with a copper core, extruded lead sheathing and double steel armor. This surrogate is designated 7E. The wire rope candidate is a 63 mm (2.5 in) 35x7 twist resistant wire rope.

The power type cable #7E was selected principally for its better handling equipment interfacing compared to a wire rope which would require spelter sockets for splicing. The 7E cable can be manufactured with no change in the outside diameter over its entire length. Table 0.4 provides a comparison of the surrogate cables.

2. Cable Vessel and Cable Handling Equipment

The survey of candidate cable vessels was narrowed to a choice between:

a. FLEXSERVICE 3

b. Flat Deck Barge

The FLEXSERVICE 3 is a commercial vessel with experience in laying flexible pipe and power cables particularly in the North Sea (see Fig. 0.7). The vessel has extensive navigational equipment and sophisticated dynamic positioning capabilities. Existing cable handling equipment will be used with a modified control system.

The flat deck barge is a generic 76 m x 24 m (250 ft x 78 ft) vessel expected to be readily available on the West Coast. This vessel will require a complete outfitting with the following major items:

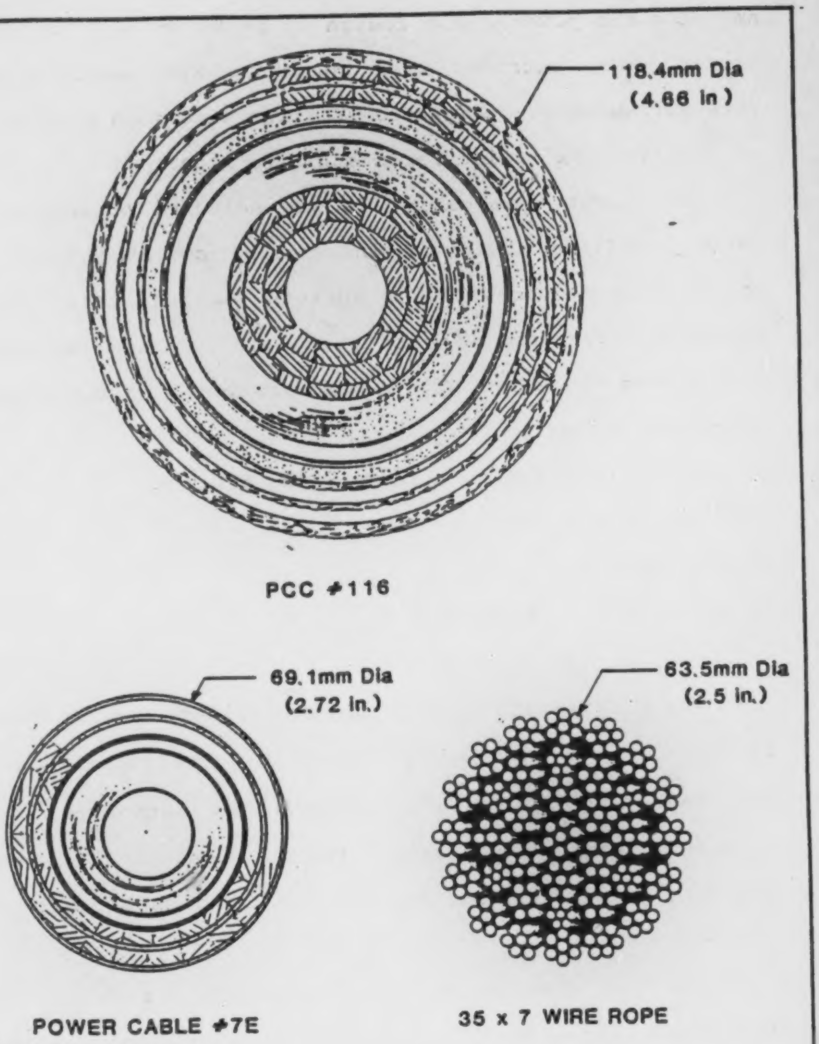
a. Thrusters for position keeping

b. Power supply

c. Habitability and safety equipment

d. Cable storage and handling equipment

The cable storage and handling equipment is available from Jacobson Bros. in Seattle. However, the thrusters, which are a major cost item, would require manufacturing. The remaining equipment is either off the shelf or can be rented.


118.4mm Dia
(4.66 in)
69.1mm Dia
(2.72 in.)
63.5mm Dia
(2.5 in.)

PCC #116

POWER CABLE #7E

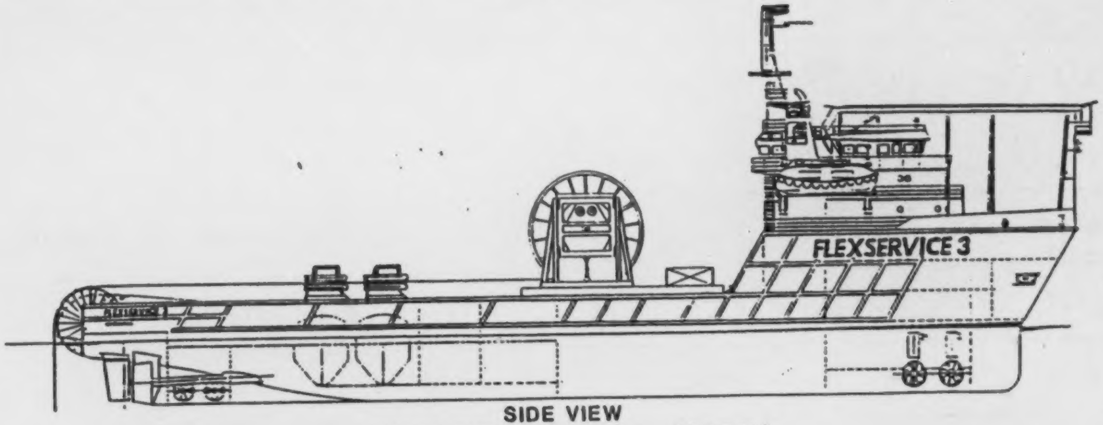
35 x 7 WIRE ROPE

FIGURE 0.6 CROSS SECTIONS OF PCC #116 AND SURROGATE CABLES

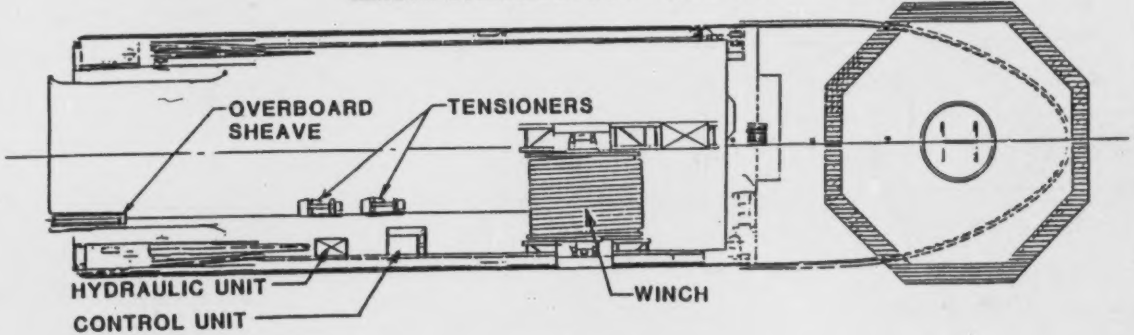
TABLE 0.4 FINAL CANDIDATE SURROGATE CABLE CHARACTERISTICS WITH RESPECT TO PCC #116

CABLE CHARACTERISTIC		REFERENCE CABLE PCC #116	SURROGATES #7E	35x7 W.R.
Cable diameter (mm)		119.5	69.1	63.5
Weight (kg/m)	Wet	27	15.4	13.7
	Dry	37	19.0	16.1
Hydrodynamic Constant (m/s)		1.9	1.89	1.84
Max. Tension (t)	Allowed	78.7	80	45.3(2)
	in 1920 m(1)	51.8	42.4	38.2
Max. Allowable Squeeze (t/m)		5.0	15.0	15.0
Min. Allowable Bending Dia. (m)	w/Max. Tension	12.0	6.0	1.3
	w/o Tension	7.0	3.0	1.3

(1) Max. Tension in 1920 m = 1.3 x wet weight x 1920 m + 4000 kg
(2) 1/5th of Rated Breaking Strength


FLEXSERVICE 3

SIDE VIEW
LENGTH OVERALL 273 FT (83.2 M)


OVERBOARD SHEAVE
TENSIONERS
HYDRAULIC UNIT
CONTROL UNIT
WINCH

TOP VIEW

FIGURE 0.7 M/V FLEXSERVICE 3
(SOURCE COFLEXIP AND SERVICES)

The M/V FLEXSERVICE 3 candidate vessel is recommended along with surrogate cable 7E to be used for the At-Sea Test. This option was selected primarily for the high level of confidence it provides in a successful at-sea test. This confidence is based on the operating experience of FLEXSERVICE 3 in the North Sea in high sea states, while maintaining accurate position. Although the barge option provides greater program flexibility and lower estimated cost, it lacks the equipment and crew experience which are significant factors in projecting the relative reliabilities and successful operation of the two options. The barge option is estimated to cost $5.4 million and the M/V FLEXSERVICE 3, $6.0 million.

3. Integrated Control System

The integrated control system for the at-sea test is designed for the unique requirements of the HDWC program and will be adapted to maximize use of the available equipment and operational features of the M/V FLEXSERVICE 3. The control system inputs will include current profile; ship position, heading, and speed; suspended cable length and cable payout; bottom cable path bathymetry and touchdown point; and top cable tension and angles (see Fig. 0.8A). In those portions of the cable route which require high accuracy, acoustic transponders to provide position and shape data will be attached to the cable. A long-base bottom transponder navigation system will be used to accurately locate the transponders attached to the cable. This system will provide location of cable attached transponders to an accuracy of ±1 m (3 ft) relative to the bottom transponder network. A support vessel will be used to interrogate the underwater transponder grid and measure currents. Sensitivity analysis of the parameters which affect accuracy of the laying operation indicate the water column currents to have the most effect. The current and acoustic information will be transmitted to the controller on the FLEXSERVICE 3 via a radio data link (see Fig. 0.9). Use of a separate support vessel will allow separation of the acoustic equipment

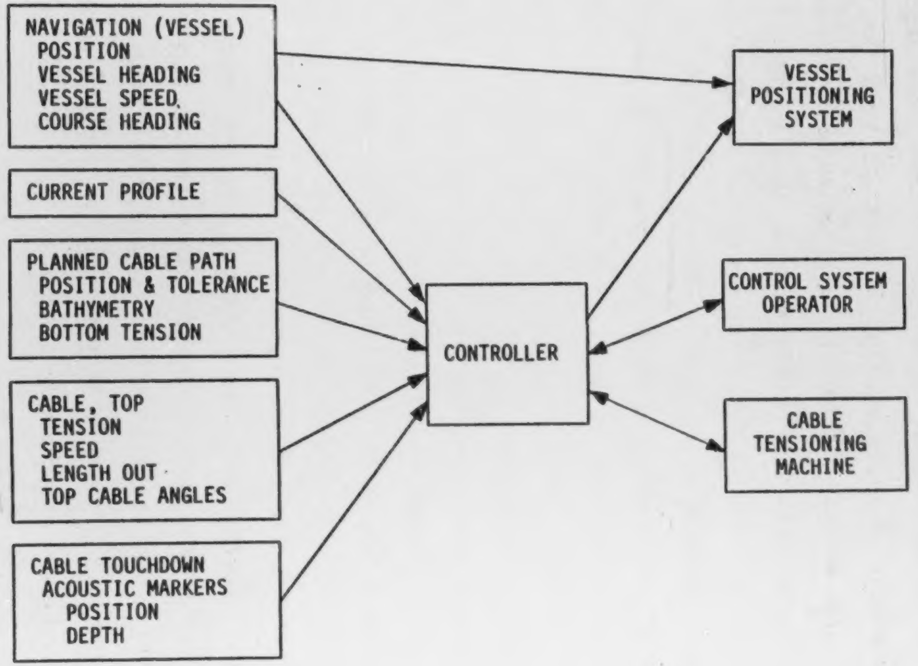

NAVIGATION (VESSEL)
POSITION
VESSEL HEADING
VESSEL SPEED
COURSE HEADING
CURRENT PROFILE
PLANNED CABLE PATH
POSITION & TOLERANCE
BATHYMETRY
BOTTOM TENSION
CABLE, TOP
TENSION
SPEED
LENGTH OUT
TOP CABLE ANGLES
CABLE TOUCHDOWN
ACOUSTIC MARKERS
POSITION
DEPTH
CONTROLLER
VESSEL POSITIONING SYSTEM
CONTROL SYSTEM OPERATOR
CABLE TENSIONING MACHINE

FIGURE 0.8A CONTROL SYSTEM DATA FLOW DIAGRAM

from the "noisy" FLEXSERVICE 3. This information along with the preplanned cable path location and cable tension requirements will be processed by the controller to determine if the cable is being layed as required. If the cable is not being positioned or tensioned according to plan, the controller will compute the required correction and send the appropriate commands to the vessel positioning system, control system operator, and cable tensioning machine to change the position and/or heading of the vessel, and adjust cable tension or payout to compensate for deviations. Figure 0.8B describes these steps in block diagram format.

4. Test Protocol

The at-sea test will be conducted in the Alenuihaha Channel under typical and representative wind, wave, and current conditions prevalent in the channel. An 8 km (26000 ft) length of surrogate cable 7E will be laid and retrieved on two portions of the proposed cable route as shown on Fig. 0.10. These lays represent the most difficult portion of the Maui and Kohala Slopes. The Maui slope represents the most difficult laying requirement for accuracy due to its narrow width, and the Kohala slope represents the most difficult laying requirement for residual tension control. Table 0.2 summarizes the features of these two sections designated 3 and 6. These laying operations are directed at the primary test objective of determining the technical feasibility of properly laying the cable on the bottom. Additional laying operations will be performed as time permits to meet the secondary objectives of monitoring the performance of the control system and measuring environmental conditions that result in ship motion and dynamic cable loads.

The M/V FLEXSERVICE 3 will be utilized under 24-hour operation over 11 days at sea. A locally available manned submersible, the

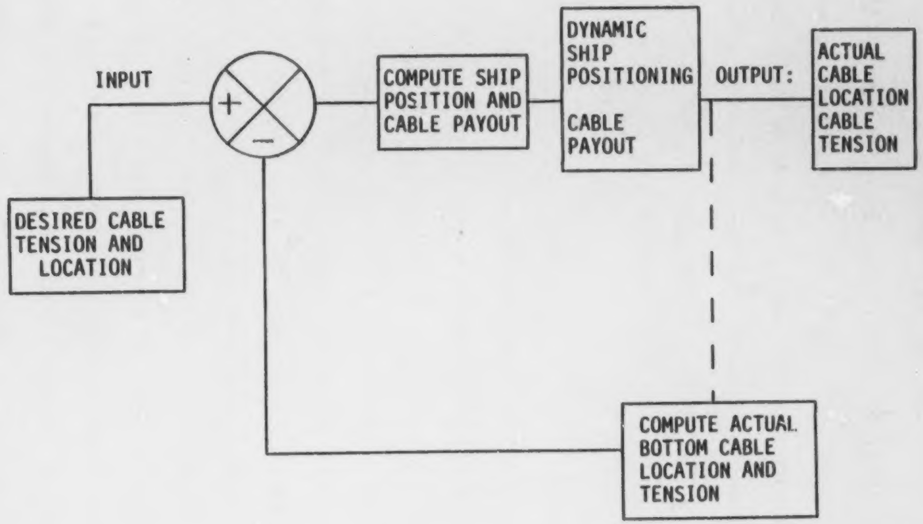

INPUT
DESIRED CABLE TENSION AND LOCATION
+
−
COMPUTE SHIP POSITION AND CABLE PAYOUT
DYNAMIC SHIP POSITIONING
CABLE PAYOUT
OUTPUT:
ACTUAL CABLE LOCATION CABLE TENSION
COMPUTE ACTUAL BOTTOM CABLE LOCATION AND TENSION

FIGURE 0.8B BASIC BLOCK DIAGRAM OF THE CABLE CONTROL SYSTEM

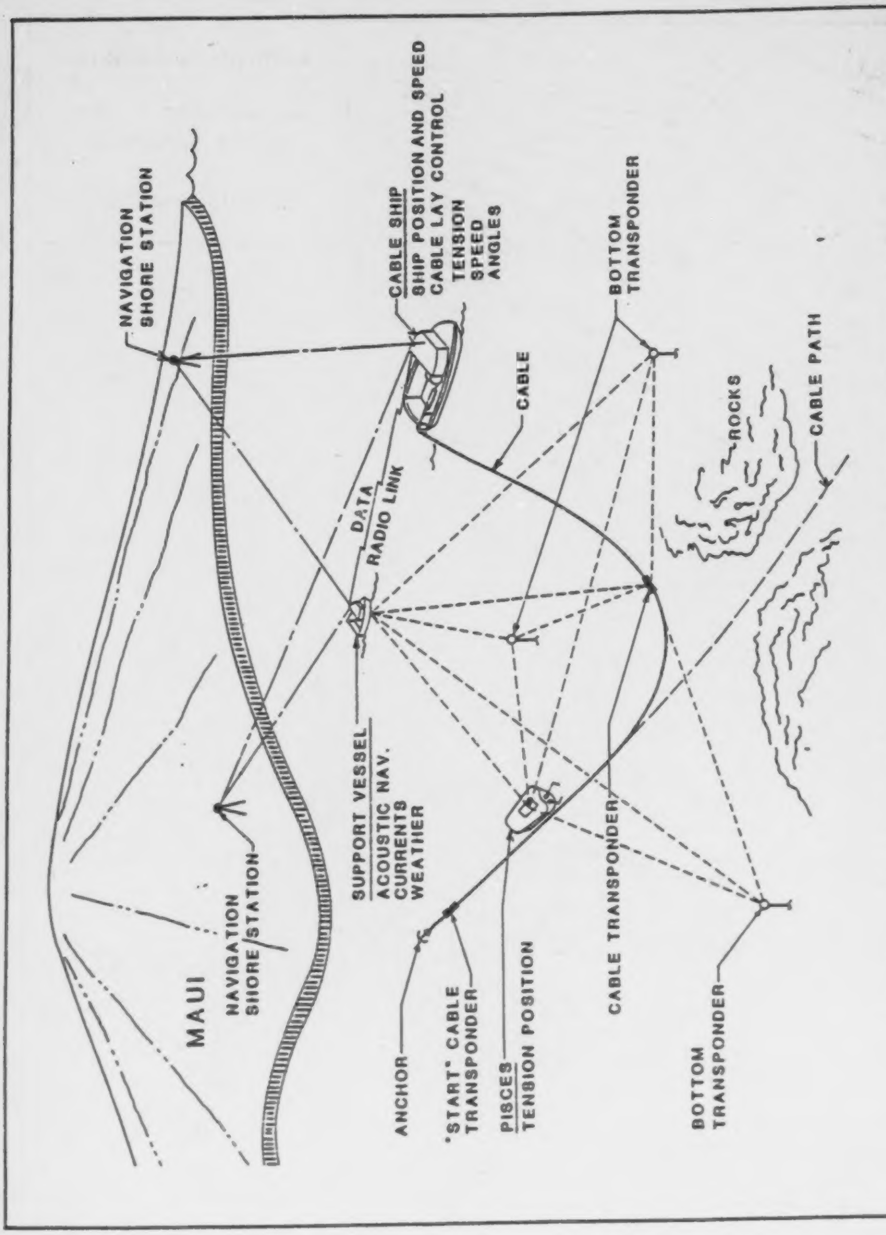

MAUI
NAVIGATION SHORE STATION
NAVIGATION SHORE/STATION
ANCHOR
"START" CABLE TRANSPONDER
PISCES
TENSION POSITION
SUPPORT VESSEL
ACOUSTIC NAV.
CURRENTS
WEATHER
DATA
RADIO LINK
CABLE SHIP
SHIP POSITION AND SPEED
CABLE LAY CONTROL
TENSION
SPEED
ANGLES
CABLE
CABLE TRANSPONDER
BOTTOM TRANSPONDER
BOTTOM TRANSPONDER
ROCKS
CABLE PATH

FIGURE 0.9 HDWC AT-SEA CABLE LAYING TEST CONFIGURATION

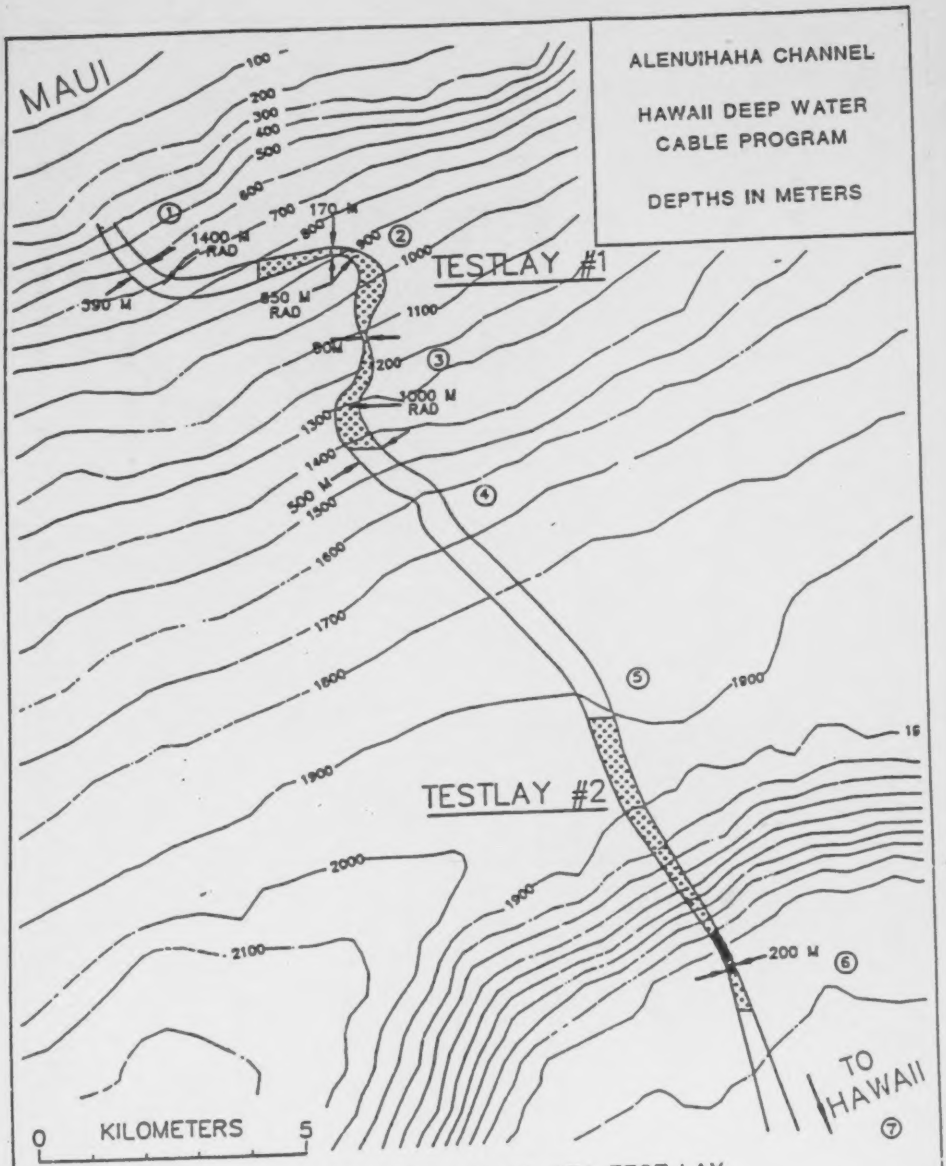

ALENUIHAHA CHANNEL
HAWAII DEEP WATER
CABLE PROGRAM
DEPTHS IN METERS
MAUI
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
19
①
②
③
④
⑤
⑥
⑦
1400 M
RAD
390 M
170 M
850 M
RAD
80 M
1000 M
RAD
500 M
200 M
TESTLAY #1
TESTLAY #2
TO
HAWAII
0
KILOMETERS
5

FIGURE 0.10 AT-SEA TEST LAY

PISCES V, will be used to verify the actual position and tension of the cable on the bottom. (See Fig. 0.9). Measurements of the parameters taken by the integrated control system and of the prevailing ocean environmental conditions will be recorded on a data logger located on FLEXSERVICE 3 for data analysis and documentation.

5. At-Sea Test Program Plan

The program envisioned for the at-sea test described above is estimated to cost approximately $6 million (excluding the cost of the surrogate cable). The major events are:

o	Design	Jan 87 - Nov 87
o	Surrogate Cable and Equipment Procurement	Nov 87 - Jun 88
o	Outfit FLEXSERVICE 3	May 88 - Jun 88
o	FLEXSERVICE 3 Transit to Hawaii	Jun 88 - Aug 88
o	Test	Aug/Sep 88

ATTACHMENT II

A REVIEW OF HAWAII DEEP WATER CABLE PROGRAM
AND
GEOTHERMAL DEVELOPMENT IN HAWAII

MARCH 15, 1987

The Hawaii Deep Water Cable (HDWC) program has used Federal funding to develop technologies which have application well beyond the immediate needs of the State of Hawaii. These are highlighted on the next page.

Also shown in both tabular and graphic form, is the success of this Federal support in leveraging private sector investment in geothermal development. With initial government funding to prove the geothermal reservoir (HGP-A), and continued funding to prove the feasibility of transmission to a major market (HDWC), the private sector has remained committed to the commercial development of this renewable resource. Potential private investment for full commercial development is anticipated to exceed $1.5 billion.

This research is fully consistent with the U.S. Department of Energy, Electric Energy Systems, program strategy of long-term, high-risk, potentially high-payoff research that will meet national security objectives, protect public health and safety, and fulfill efficiency and fuel substitution objectives. It supports the national objective of providing reliable sources of electricity at the lowest possible cost with minimal adverse environmental impact.

PROGRAM STATUS

Accomplishment to Date

- Survey of Alenuihaha Channel Winds, Waves, Surface & Near Bottom Currents
- Bottom Roughness Survey of Alenuihaha Channel
- Cable Routing Study
- Design of Prototype Cable
- Fabrication of Prototype Cable
- Development of Laboratory Testing Program for Prototype Cable
- Conceptual Design Approach for Vessel and Equipment for At-Sea Testing
- Development of Predictive Model to Determine Cable Touchdown and Residual Tension
- Design of Surrogate Cable for At-Sea Testing
- Power System Integration for Study of Cable Electrical Input to Oahu

Future Project Goals

- Conduct Laboratory Testing
- Conduct At-Sea Testing

TECHNOLOGY TRANSFER
HAWAII DEEP WATER CABLE PROGRAM

Cable Research & Design	Users
o State-of-the-Art Cable Design, Installation and Repair Techniques.	Cable Manufacturers, Research Laboratories - e.g. Bell Laboratories, Naval Architects, Coastal Electrical Utilities - e.g. Southern California Edison.
o Development of a Unique Program to Test Large Diameter Cables.	Cable Manufacturers, Cable Purchasers, Testing Standards Developers - e.g. CIGRE.
By-Product Information and Technologies	
o Development of a High Resolution, Deep Water, Bottom Roughness Measuring System (State Funded)	Oceanographers, U.S. Geological Survey, Defense Mapping Agency, U.S. Navy (Anti-Submarine Warfare), Commercial Developers of Seabed Mineral Resources.
o Initial Testing, Operation and Verification of the Newly Developed SeaMARC/S which simultaneously obtains Side Scan and Bathymetric Data (State Funded).	Oceanographers, U.S. Geological Survey, Defense Mapping Agency, U.S. Navy (Anti-Submarine Warfare), Commercial Developers of Seabed Mineral Resources.
o Scientific Knowledge of the Dynamic Oceanography and Meteorology, and the Bathymetry and Geology of the Alenuihaha Channel.	Scientific Community, U.S. Geological Survey, Defense Mapping Agency.

HAWAII DEEP WATER CABLE PROGRAM AND GEOTHERMAL DEVELOPMENT IN HAWAII

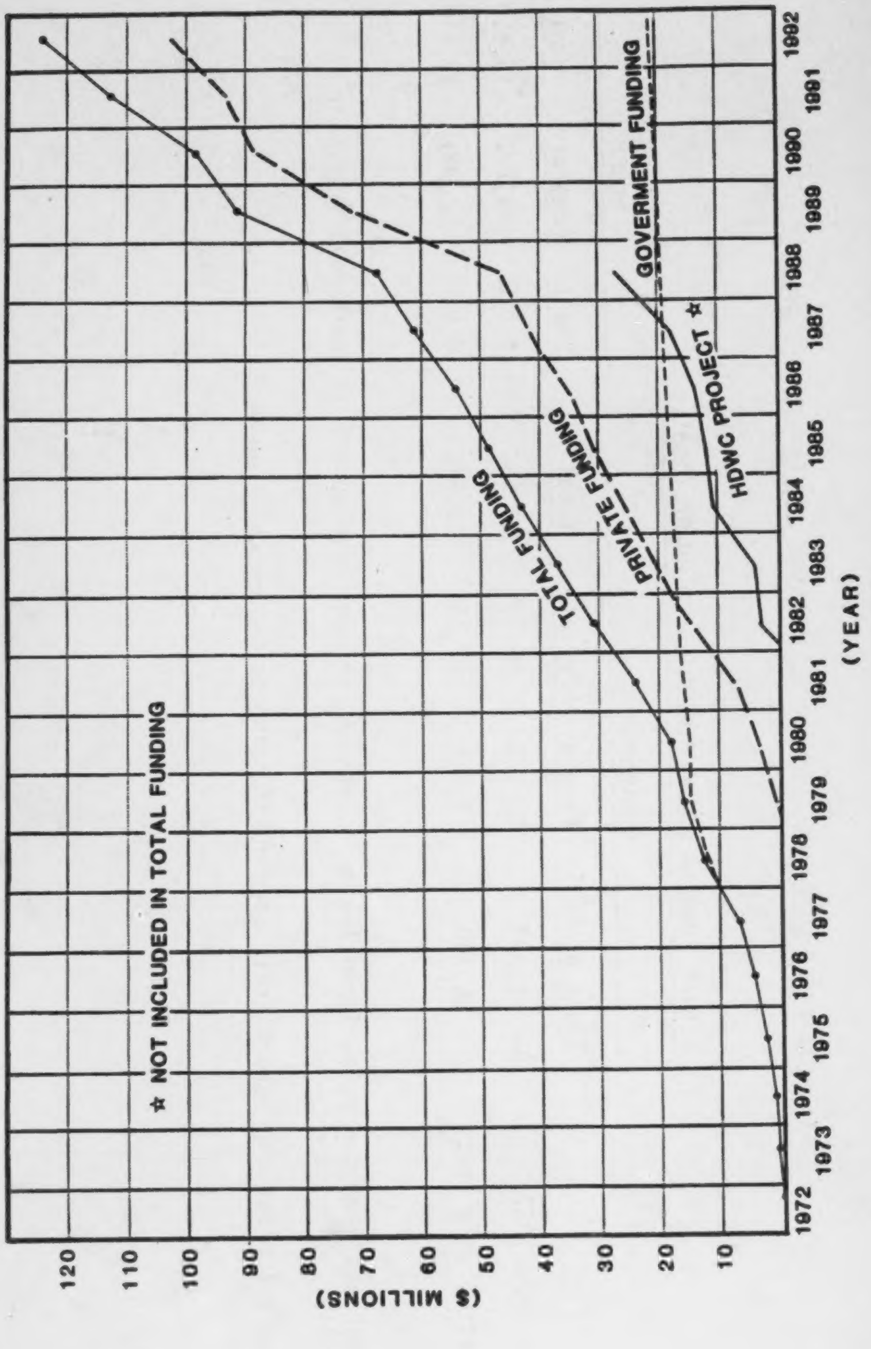
TOTAL FUNDING FOR GEOTHERMAL AND HDWCP (000's)

	Geothermal				HDWCP		
Year	State & Local	Federal	Private	Total	State	Federal	Total
1972 thru 1987	5,399	13,835	42,395	61,630	4,910	13,700	18,610
Cumulative thru 1992	6,149	14,585	91,347	122,882	4,910	22,500	27,410

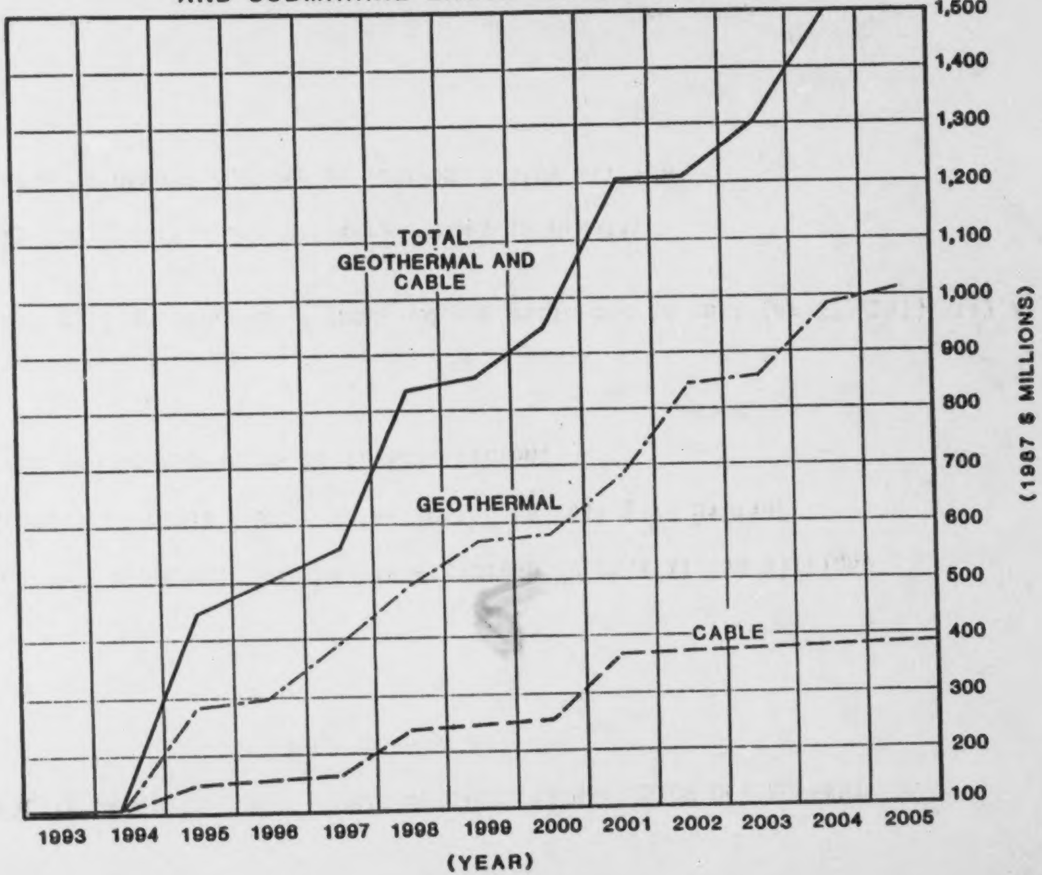
o HDWCP has been the prime incentive for continued private development of Geothermal Energy in Hawaii.

o Figure 1 shows the relationship of HDWCP funding to Geothermal Energy.

CUMULATIVE GEOTHERMAL FUNDING
BY GOVERMENTAL AND PRIVATE SECTORS



COMMERCIAL GEOTHERMAL DEVELOPMENT AND SUBMARINE CABLE CAPITAL COSTS



COMMERCIAL GEOTHERMAL AND SUBMARINE CABLE TRANSMISSION DEVELOPMENT

1992 through 2004

Costs

The development of a 500 MW geothermal resource is estimated to cost $1.154 billion.

The development of a commerical cable system is estimated to cost $379 million.

Total cost for geothermal and transmission is $1.533 billion.

Benefits

- o Annual savings of 6.7 million barrels of imported oil estimated to cost (at $22/bbl) $147.4 million.
- o Secure energy supply for civilian and military forces in Hawaii.
- o Cumulative net benefit to Hawaii economy by year 2010 $189 million.

TECHNOLOGY TRANSFER FROM THE HAWAII DEEP WATER CABLE PROGRAM

February 26, 1987

I. INTRODUCTION

The Hawaii Deep Water Cable Program (HDWCP) is a research and development effort to determine the feasibility of installing and operating a submarine power transmission system between the Islands of Hawaii and Oahu in the Hawaiian Archipelago. The benefits of such a system have been identified and discussed in past documents. The purpose of this briefing is to summarize the present status of technology transfer opportunities from this R&D effort.

Technology transfer from the HDWCP can be divided into two groups. The first involves the transfer of cable design, installation, and repair techniques to other locations or different types of installation, such as oil and gas pipelines. The second involves ideas and concepts, equipment and instrumentation, and methodologies conceived and developed for the HDWCP, but with potential application well beyond the confines of submarine power transmission system design and installation.

As an overview, these are shown, together with potential users, on this slide and in your handout material. I will illustrate, with specific examples, the uses of technology developed under the HDWCP.

II. TECHNOLOGY TRANSFER

Cable Design And Installation Technology

The design requirements imposed by the depth of the Alenuihaha Channel and the severity of its wind and wave climate demand an advancement in the state-of-the-art for both the design and installation of submarine power cables. This has been a proprietary area, where information is closely guarded by a few large multi-national organizations. This condition is created by the competitive nature of the market, but leads to a multiplication of effort, a lack of technical advancement in the absence of information exchange, and a consequent inefficiency in design. The HDWCP has placed the methodology for design of a submarine power cable under technical scrutiny in a public forum. With a fundamental parametric approach to cable design, a generic methodology has been developed with laboratory validation for a specific set of conditions. The same is true for installation techniques, with mathematical models for vessel and cable handling equipment control validated under actual and rather extreme environmental conditions at sea.

Since the HDWCP is a government sponsored program, results of these evaluations are in the public domain and available for the first time to U.S. industry.

The HDWCP is tasked not only with showing technical feasibility, but that this feasibility is a logical and realistic extension of the present state-of-the-art. Only in this manner can the concepts be accepted with credibility by the conservative financial community and profit-based industry. Quantum leaps of technology are not desired nor considered; the uncertainty of impelemntation associated with such an approach is unacceptable.

For example, computer analytical techniques have been used to evaluate the dynamic response of the coupled cable and vessel system to winds, waves and currents. Results indicate that the resonant frequencies of the dynamically coupled system are in the high-frequency region of wind/wave spectra. Technical literature has tended to disregard this region, both in theoretical analysis and in direct field measurements, since it has not been of concern in the design and construction of common ocean structures. Nevertheless, analysis shows that these resonant forces can be of major importance for the deployment of large cables and pipelines from surface vessels. To quantify this issue, a high frequency wave measurement and analysis program was conducted. The results are applicable to other deployment configurations, such as oil and gas pipelines and instrument packages in similar ocean environments.

Another example is the cable vessel control system, which is the heart of the at-sea test experiment. This system is an amalgam of state-of-the-art, commercially available instrumentation, equipment and techniques, melded into a predictive and corrective array through a unique computer program. The model uses vessel position, speed and heading, cable payout rate, bottom topography data and vertical ocean current profiles to calculate the bottom touchdown position of the cable. Measured reaction of the cable to actual currents allows fine tuning to achieve required touchdown location and tension. The control program, while complex, represents for the first time a serious effort to predict the position of a cable on the ocean bottom, in a relatively automatic mode using only sensor information.

While the HDWCP will advance the state-of-the-art for power cable installation in very deep water, its technology could be applied to other situations of similar complexity. For example, the problems of cable or pipe deployment in shallower waters, but with high current velocities are likely candidates. The technology is similarly applicable to the installation of acoustic arrays for military purposes. Bell Laboratories has requested technical information on the use of power cable for active sonar systems in anti-submarine warfare.

Southern California Edison's long-range transmission planning involves an intertie to the Pacific Northwest and possibly Canada. An offshore transmission option to avoid the social and environmental impacts of overland transmission could be provided through HDWCP technology transfer. The depth of installation available through HDWCP techniques would minimize risk of mechanical damage from anchors or trawlers. Both technical and cost information has been supplied to Southern California Edison at their request.

Development Of A Unique Laboratory Cable Test Program

Present standards for testing submarine power cables are limited to individual tests which verify only that the cable will withstand a specific mechanical or electrical stress. Under actual conditions of installation and operation, a submarine cable must endure a sequential series of stresses, which include mechanical, electrical and thermal loads varying in level and duration. For the first time, a laboratory testing program has been developed which simulates the life of a cable. Following verification that the cable can withstand the unprecedented mechanical loads associated with the depth of installation in the HDWCP, the cable's response to electrical stresses will be demonstrated.

Laboratory testing will also include an accelerated simulation of the effect of diurnal currents on the cable over its minimum 30-year life, confirming that fatigue failure has been properly considered in design. Finally, the testing program introduces the issue of combined corrosion and abrasion as a fundamental design parameter for the armor layers of the cable. Corrosion and abrasion have been considered previously but dealt with independently. Considering the renewal of unoxidized metal through abrasion, with the potential for more rapid corrosion, is a unique aspect of the HDWCP testing program.

The approach to cable testing in the HDWCP should be of great interest to institutions such as CIGRE, responsible for the development of international testing standards. With or without the acceptance of HDWC testing as a standard, the opportunity through HDWC experience to create a test specification which models installation and operation should be beneficial to both cable manufacturers and purchasers, increasing confidence that the cable specified and fabricated can meet the actual sequential requirements of its environment over the design life.

III. BY-PRODUCT INFORMATION AND TECHNOLOGIES

Development Of A High Resolution, Deep Ocean, Bottom Roughness Measuring System

To verify the feasibility of a minimum 30-year service life of the power cable on the ocean bottom, detailed knowledge of the ocean bottom roughness was required to a very high degree of accuracy. Any submarine cable will have limits in how much it can be bent and how great a distance it can span without support. But unless detailed bottom survey data is made available, project engineers cannot determine the best route for the cable; indeed, they cannot determine whether a feasible route exists.

One of the most difficult aspects of this task involved a requirement for resolutions of less than 6 inches at ocean depths of 6,300 feet. This meant that data acquisition equipment could not be located on the ocean surface; an instrument package had to be "flown" near the bottom. There was no commercially available system that could acquire the data to the accuracy required; it had to be created.

A new instrument system was developed using commercially available state-of-the-art sensors and an internal recording capability. A special vertically stabilized platform was designed to house the instruments. This system was successfully used during the first Bottom Roughness Survey in October-November 1985. Resolution was even better than predicted.

The application of this high resolution bottom mapping system is now being explored for other purposes. For example, the exploration and development of cobalt-rich manganese crusts in the exclusive economic zones (EEZs) of the Hawaiian Archipelago and Johnston Island are keyed to an accurate evaluation of the crust resource thickness. Economic analysis shows that the primary factor determining economic feasibility of this development is the volume of substrate versus crust material mined. Average thickness of crust material is 1 inch. Thus, in order to design and efficiently operate a bottom moving miner, very accurate and high-resolution bathymetric information is necessary, of a level heretofore unavailable. In addition, interest has been expressed by the Naval Undersea Warfare Engineering Center in using the bottom roughness system in the installation of sonar tracking arrays. The University of Hawaii is now developing proposals to the National Science Foundation/Office of Naval Research for the use of the bottom roughness system in undersea plate techtonics studies.

Initial Testing And Operation Of The SeaMARC/S System (Funded with State of Hawaii Funds)

The newest and most sophisticated member of the SeaMARC class of high-resolution side scan sonars is the SeaMARC/S system, owned and operated by Seafloor Surveys International, Inc. The SeaMARC/S is the first side scan sonar system which simultaneously obtains both very high-resolution side scan imagery and down-looking echo sounder (fathometer) bathymetry data from a single towed vehicle. The SeaMARC/S can obtain both sets of information simultaneously in large swaths with one pass of the vehicle. Its first operation following testing involves a survey of the entire route from the Alenuihaha Channel to the island of Oahu for the HDWCP. This verification of the accuracy and quality of SeaMARC/S imagery will serve as a credibility benchmark for future applications of this remarkable instrument. Many proposed users, including the U.S. Navy, are anxiously awaiting final results from this survey.

Scientific Knowledge Of The Alenuihaha Channel

The HDWCP has sponsored significant oceanographic, meteorological, geological and bathymetric data acquisition programs in the Alenuihaha Channel, to acquire basic environmental data for cable design and installation. These field measurement programs at this depth are unrivaled in the Hawaiian Archipelago. Results indicate that the dynamics of flow through the constricting passage between islands is a highly complex response to tides, oceanic currents and surface wind stresses. HDWCP data can help define the relationship among these variables.

The value of this scientific data, independent of its value to the HDWCP and to further commercial cable applications, is very significant. For example, there is a concerted effort by the University of Hawaii, Department of Oceanography and Harvard University's Department of Oceanography to develop a computer/numerical model of oceanic flows around island systems. Their proposal to the National Science Foundation has focused on the Island of Hawaii and the Alenuihaha Channel in particular, due to the complexity of its flows and the availability of extensive oceanographic measurements. Much of this oceanographic data has been obtained by the HDWCP.

In addition, the availability of high resolution bathymetric data in both the Alenuihaha Channel and along the proposed commercial cable route is a valuable data base. This is confirmed by the recent request from the Defense Mapping Agency for copies of all available data for defense purposes.

STATEMENT OF THE CHRONAR CORP.

We thank the Subcommittee for the opportunity to submit written testimony on matters relating to the development of the photovoltaic industry.

Chronar Corporation, a New Jersey company founded over ten years ago, has concentrated on the development of amorphous silicon technology, manufacturing and commercialization of photovoltaic applications. Today Chronar Corporation is the only entity outside of Japan that manufactures amorphous silicon photovoltaic panels. In our capacity as pioneers of this important energy industry, we would like to bring to this Committee's attention trends important for the welfare of the nation.

During the past three years, since Chronar started manufacturing operations, the direct manufacturing cost of amorphous silicon photovoltaic panels has decreased from approximately $4 per watt to $1 per watt. With our existing manufacturing technology, and without any automation, we can clearly see a further decrease in this cost to approximately $.50 per watt by the end of 1988, and with some degree of automation, a decrease to approximately $.25 per watt by the year 1990. This manufacturing cost includes direct labor, direct materials and manufacturing overhead. It does not include capital amortization, debt service, corporate overhead and profits. With this cost evolution, Chronar is prepared this year to start installation of photovoltaic power stations at the 50 megawatt level at an installed power station cost of $3.00 per peak watt. At this capacity-cost, photovoltaic generators could generate electricity in parts of the United States at about $.13 per kilowatt hour, and thus be cost-competitive with other forms of electricity generating capacity.

The reality of the emergence of a cost-effective photovoltaic industry is not reflected appropriately in the nation's energy planning. In order to benefit from this clean source of energy, increasing the nation's energy independence, we recommend a three-pronged effort:

(1) We strongly urge that the House and Senate Appropriations Committees continue support of the photovoltaic research and development budget at a level of $50 million, somewhat above last year's appropriation. We were one of the companies which benefited from a SERI-supported three-year research and development program, and this support was instrumental in helping us to develop our technology to its present level. This technology will continue to develop over the next decade, and continuing research and development support is indispensable for our company to stay at the cutting edge of technology in this industry. As with so many other industries, five years ago the United States supplied approximately 80% of the world's photovoltaic production. This year the U.S. market share has fallen to under 50%, with the Japanese gaining leadership in the industry. Unfortunately, it is not only in commercial applications that we have lost our leading position, but government and private sector research and development funding and research and development accomplishments are coming more from Japan than from the United States. A $50 million research and development investment per year into technology which will become a major factor in our energy mix, is a ludicrously small sum compared to its potential reward.

(2) To accelerate the development of our energy independence with the aid of photovoltaics, we would strongly urge the U.S. Congress to stimulate the purchase of photovoltaic power stations by U.S. government agencies. For example, this might include additional remote power stations for NASA and the military, and secure power sources for U.S. Embassies abroad and for Department of Defense installations. Legislative support and encouragement of such programs are critical for the photovoltaic industry.

(3) Finally, Chronar Corporation wants to propose a specific power station project, to be located in New Jersey, to be con-

structed in cooperation with one of our New Jersey utilities and with Harbert Corporation of Birmingham, Alabama, to generate photovoltaic electricity at cost-effective prices. For this project we would propose a 50 megawatt power station, to be installed by the end of 1991, at an average installed cost of $3.00 per watt. To accomplish this, we request a federal investment of $6 million in 1988 to install the first three megawatts, and a further federal investment of $15 million in 1989 to install the next 10 megwatts. Seventeen megawatts in 1990 and 20 megawatts in 1991 would be installed without any further federal investment. With the building of this power station, photovoltaic electricity for peak load applications should prove cost-effective.

We urge this Committee to favorably consider the above recommendations. It is in our nation's interest to do so.

STATEMENT OF THE EDISON ELECTRIC INSTITUTE AND AMERICAN NUCLEAR ENERGY COUNCIL

The Edison Electric Institute (EEI) is the national association of investor-owned electric companies. Its members serve approximately 73 percent of all ultimate electricity customers in the nation. The American Nuclear Energy Council (ANEC) represents over 100 organizations having an interest in nuclear energy, including investor, public and cooperatively-owned utilities, manufacturers, architect-engineers, uranium mining companies (both domestic and international) and various other firms engaged in the nuclear fuel cycle.

RESEARCH AND DEVELOPMENT

For sound and effective economic growth in the United States, electric utilities must be capable of providing adequate quantities of electric power at competitive prices. Today there are only two satisfactory fuels for powering central electricity generating stations: coal and uranium. U.S. utilities want to continue the use of nuclear generation as an important element of our electricity supply.

However, as DOE noted in its recently issued Energy Security Study, "nuclear power's future contribution is clouded by a variety of problems that the U.S. Government and industry each could help solve." Thus, it is essential that the Department of Energy maintain a strong nuclear research commitment. DOE's funding for nuclear research and development should reflect a firm commitment by the Federal Government to help maintain this important energy option.

URANIUM ENRICHMENT

We are deeply concerned that the DOE uranium enrichment enterprise is headed for failure. Simply put, the enterprise is not competitive in the world marketplace. In 1987, DOE is generally charging commercial customers $119 per SWU, depending on contract terms. Although this price shows the progress DOE has made in reducing costs in recent years, it also demonstrates graphically DOE's lack of competitiveness in the world market where prices are less than $100 per SWU.

One of the major reasons for DOE's higher prices now and projected in the future is the issue of "unrecovered Government costs." The Office of Management and Budget (OMB) claims billions of dollars are owed to the U.S. Treasury by DOE's commercial customers. In fact, DOE's commercial enrichment customers are not indebted to the U.S. Treasury. Revenues from commercial customers have exceeded the costs of providing the service to this customer segment. DOE should not be permitted to allocate funds to the U.S. Treasury from the enrichment program in FY 1988, and no money should be so allocated until Congress has determined the appropriate amount for such costs. If costs are assigned properly, electric utilities believe that commercial customers have subsidized the defense and non-proliferation policies of the Federal Government.

In a 1984 report, organizational structure was identified as a major reason for DOE's non-competitive posture by the Tri-Committee Business Advisory Panel on the Department of Energy's Uranium Enrichment Enterprise. This panel of business experts recommended that:

> Congress and the Secretary of Energy should take steps to establish a private business management structure

for the enrichment enterprise. Alternative institutional structures under Government ownership should be examined. The proper structure would be compatible with an approach to privatization of enrichment services.

No visible action has taken place on implementing this recommendation. The electric utilities urge Congress and DOE to take action to provide a market-driven management structure.

Also, electric utilities recommend that Congress continue to provide funding for DOE to develop advanced technologies for enrichment. Efforts must be carefully aimed at answering key technology and engineering questions in a cost-effective manner so that the goal of achieving a lower cost enrichment process will be met. Fundings should continue so long as AVLIS offers the expectations of more cost-efficient enrichment capacity.

Electric utilities recognize that the issues surrounding uranium enrichment are complex, and are part of a large body of issues concerning the nuclear fuel cycle. Electric utilities believe that comprehensive legislation is an appropriate vehicle to develop the needed policy and resolve the issues.

EMERGENCY PLANNING

In 1980 Congress established the current framework for emergency planning, by mandating that in order for a nuclear power plant to receive an operating license, an emergency response plan had to be developed and approved, with the cooperation of state and local governments. However, Congress did not intend for these entities to have a veto authority over the operation of nuclear plants.

It is now apparent, that in some instances emergency preparedness requirements have led to precisely the result that Congress sought to avoid when it formulated the original rules. Congress should continue to make clear its original direction that responsibility for regulating the radiological health and safety aspects of commercial nuclear power remains with the Federal government.

NUCLEAR WASTE

The Nation requires the development of a technically sound and publicly acceptable high-level radioactive waste disposal program in order that both commercial and defense use of nuclear energy continue. For DOE to take the necessary steps to implement the NWPA during FY 1988, the industry asks Congress:

- to appropriate for FY 1988, from the electric utility/customer-funded Nuclear Waste Fund, sufficient funds for DOE to proceed expeditiously with site characterization at the three potential first repository sites, including the initiation of drilling exploratory shafts,
- to authorize and fund the construction of the Monitored Retrievable Storage Facility (MRS), and
- to provide equitable payments of defense waste disposal fees into the Nuclear Waste Fund.

Electric utility companies, on behalf of the electricity consumers, have paid about $ 2.7 billion into the Nuclear Waste Fund and continue to pay at a rate of over $ 400 million per year; the Fund's current balance is about $ 1.7 billion. Although these monies are available only for expenditures pursuant to the NWPA and must be appropriated annually by Congress, the Administration uses the positive balance in the fund, each year, to reduce the overall federal deficit calculation under Gramm-Rudman-Hollings. On the other hand, the Administration has not paid any of its fair share as required by the NWPA into the Nuclear Waste Fund for disposal of defense high-level radioactive waste.

We recognize that the DOE schedule, even with the recently announced five year slip, is "success-oriented." It does not incorporate some of the uncertainties inherent in a program of this type. To minimize the potential for these uncertainties to cause further slippages in the startup of the first repository, appropriations for FY 1988 and subsequent years from the Nuclear Waste Fund must be sufficient to permit expeditious drilling of the exploratory shafts at the three potential first repository sites.

The NWPA also requires that, once the President determines that a separate defense waste repository is not necessary, the Federal Government contribute its fair share to the Nuclear Waste Fund. Such a decision was made by the President in 1985. Since the Federal Government has not paid any of its share into the Nuclear Waste Fund, there is absolutely no question that commercial electricity consumers have, and are continuing, to subsidize the defense program. This is not just an irritant to the electric utilities and electricity consumers, it is plainly unjust. If the generators of commercial nuclear waste are required to fund in advance the development of the high-level radioactive waste disposal system, so does the generator of the defense waste. DOE has finally made public its proposed methodology for developing a defense waste cost share. Unfortunately, DOE is using an inadequate administrative process to propose an inadequate cost sharing formula that will lead to an inadequate contribution to the Nuclear Waste Fund at some indeterminant time. We ask that Congress require an adequate and equitable cost share for the disposal of defense waste.

Now DOE proposes to meet the 1998 contractual obligation to the electric utilities by use of the MRS. The nuclear industry supports the development of an MRS as an integral part of the repository program. However, the MRS is not acceptable for long-term disposal, which must be accomplished in a deep underground repository. If Congress accepts an NWPA implementation change that includes using the MRS as the means to live up to the 1998 obligation, then Congress must authorize the MRS and not restrict its use. Even though the NWPA requires DOE to submit a proposal for the MRS, one is not required for Congress to authorize the facility.

DOE and the affected States and Indian Tribes must make best efforts to reach Consultation and Cooperation (C&C) agreements in a timely manner. However, all parties must recognize that the goals of DOE and the States and Indian Tribes may simply be different and comprehensive agreements may not be possible. As long as good faith efforts are made, the lack of C&C agreements should not prevent DOE from receiving unrestricted appropriations from the Nuclear Waste Fund so that the NWPA implementation program can go forward.

Congress and the Administration should provide economic incentives to the States and Indian Tribes that will host high-level radioactive waste disposal system facilities. In the NWPA, Congress authorized fairly limited incentive mechanisms. In light of recent history, it is proper for Congress and the Administration to develop a broader scope of incentives needed to compensate the States, Indian Tribes and communities for hosting these facilities. Furthermore, only in Congress can the potential host States directly negotiate with the other States over acceptance of nuclear waste facilities.

THREE MILE ISLAND RESEARCH FUNDS

The cleanup of TMI-2 is progressing. Removal of the fuel material from the reactor is well underway and is expected to be complete by later 1987 or early 1988. The investor-owned electric utility industry is providing $150 million toward the cleanup over a period of six years.

Continuation of Federal R&D support funding, in addition to the industry funding, is vitally important to the cleanup program and assuring that the maximum of R&D information is obtained. We urge that Federal funding be continued to provide important knowledge for nuclear plant design, operation, and decommissioning.

CONCLUSION

The Nation's demand for electricity continues to grow. Nuclear energy will supply twenty percent of the Nation's energy needs by the year 1990. It is imperative that concerns regarding nuclear research, uranium enrichment, emergency planning, and nuclear waste disposal be addressed and resolved allowing nuclear energy to remain a viable source of electricity for the Nation now and in the future.

STATEMENT OF THE UNIVERSITY OF MASSACHUSETTS

1. SUMMARY

The University of Massachusetts (UMass) is anxious to undertake a project of great importance to the development of solar energy for building heating in Massachusetts and the country. The proposed project concerns the analysis and design of a large scale solar heating plant using seasonal thermal energy storage to provide the entire thermal load of a portion of the UMass campus.

The development of this technology has been the subject of the on-going International Energy Agency (IEA) Solar Task on Central Solar Heating Plants with Seasonal Storage (CSHPSS). Many such systems presently operate in the participating European countries and Canada though the U.S. presently is anxious to initiate its first major project which will benefit from expert review and comparative evaluation with the other IEA projects.

The University is ideally suited for this project. The campus offers numerous alternative storage opportunities and available land area for a collector array. The current aging steam network is scheduled for repair and displacement of a network branch by the solar system will provide significant capital and operational cost savings. The proposed staff in the Department of Mechanical Engineering has previous experience with a small project in Hatfield, Massachusetts and with active participation as Lead U.S. Analyst in the IEA Task. The technology will provide the New England region with an economic means of using solar energy to supply entire heating loads for many similar locations -including multi-family residential developments, commercial office developments, shopping centers, institutional facilities, and low-temperature industrial heat.

The proposed project will be completed in two years. The first year (Phase I) will concentrate on analysis and comparison of various system opportunities on campus and design alternatives. The second year (Phase II) will involve detailed design of the selected site and design alternative to provide pre-construction engineering and economic specifications. The proposed budget level is $116,550 and $126,150 for the two Phases, respectively.

2. BACKGROUND

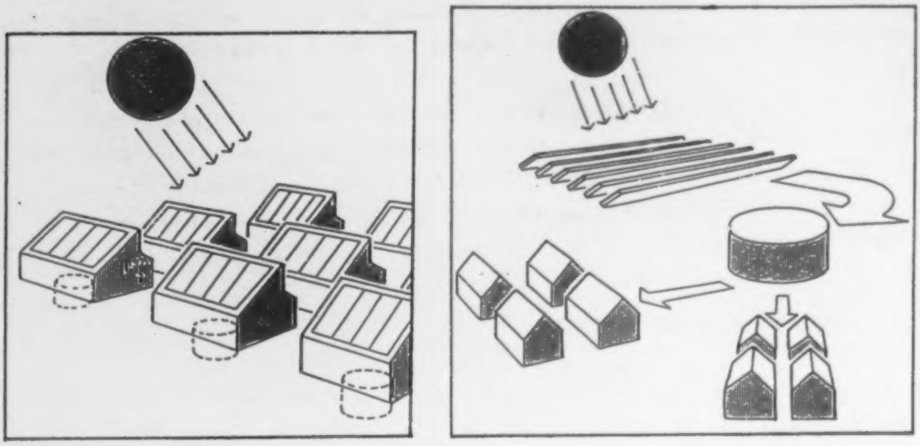
It is an unavoidable fact of nature that the need for heating of buildings is most needed when solar energy is least available. In the U.S., and especially in the northern latitudes, solar space heating is ineffective for individual houses since large collector area is required which then remains idle during summer months. Ordinarily only a small percent of the annual load is met with the solar resource. Seasonal storage alleviates this temporal mismatch and provides an uninterrupted heat source for winter loads. Solar collection occurs mainly during non-winter months when effective collection can be accomplished with low-cost solar collectors. Seasonal storage systems must be applied on a large scale so that thermal storage losses and costs are reduced to a satisfactory level. Therefore, applications include residential district heating, office/retail developments, shopping complexes, institutional sites such as schools, prisons, hospitals, etc.

It is no surprise that the interest in this technology originated and grew in countries such as Sweden, The Netherlands, Denmark, and Canada. Today, numerous operating systems in such countries provide adequate demonstration of the technical and economic merits of the technology. Figure 1 shows the conceptual difference between centralized solar heating with seasonal storage and conventional solar heating. Figure 2 illustrates the techniques used for the thermal energy storage which is normally underground and depends on the local geological conditions and storage operating temperatures.

Since 1981 the U.S. Department of Energy has participated in the International Energy Agency (IEA) Solar Task on Central Solar Heating Plants with Seasonal Storage (CSHPSS). The Task has developed the necessary analytical tools, data bases, and methodologies for system analysis and optimization, and has published a detailed evaluation of system concepts. The Task is well-recognized in the international solar community and is the subject of much interest. The Task is presently in its 3rd Phase which involves monitoring and evaluation of existing projects and design of new projects. The U.S. currently seeks to initiate its first major project and the UMass effort would be the primary candidate as the U.S. Project.

Much of the IEA effort by the U.S. Participants has concentrated on Massachusetts and the New England region. This effort includes a design study of a system for the Charlestown Navy Yard in Boston and numerous preliminary investigations of opportunities to serve subsidized housing complexes for local Housing Authorities. In addition, the major U.S. National Evaluation provided a detailed assessment of CSHPSS for New England conditions. The University of Massachusetts independently developed and constructed a small project for a school in Hatfield which operates successfully though does not capture the scale required for effective seasonal storage or the optimum design characteristics.

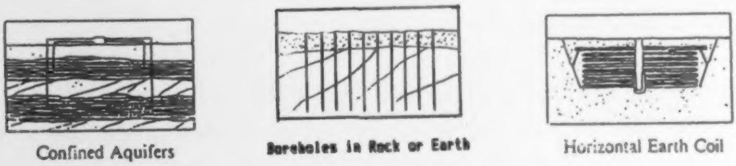
The CSHPSS technology is of great importance to the solar thermal collector industry. Present costs are dominated by marketing costs of selling a few collectors to each homeowner. CSHPSS offers the opportunity to market thousands of m^2 of collectors for individual projects which will justify costs of mass production facilities and new manufacturing plants in regions of the country where CSHPSS projects are developed. Furthermore, the large scale of the projects will justify the expense of dedicated engineering teams to



(a) Distributed Solar and Storage

(b) Central Solar Heating Plant with Seasonal Storage

Figure 1. Conceptual Comparison of CSHPSS and Conventional Solar Heating

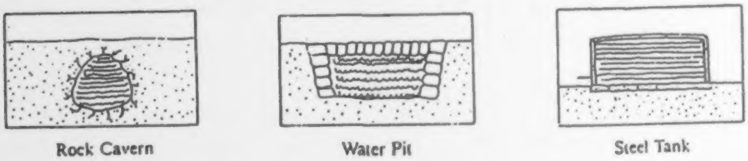


Confined Aquifers

Boreholes in Rock or Earth

Horizontal Earth Coil

(a) Non-stratified Storage Techniques



Rock Cavern

Water Pit

Steel Tank

(b) Stratified Storage Techniques

Figure 2. Options for Large-Scale Seasonal Thermal Energy Storage

properly design, operate and maintain systems, and to capture the interest of institutional investors to provide capital for system development.

In the present economic climate of low interest rates and low oil prices, support for this project should be made available to reduce our vulnerability for future uncertainties. CSHPSS allows for a major contribution of solar energy for the building heating sector in the northern climates which heretofore does not have a better alternative.

3. PROPOSED EFFORT AND WORK PLAN

The proposed project will be carried out within the Department of Mechanical Engineering at the University of Massachusetts, Amherst. The Principle Investigator will be Professor J. Edward Sunderland who previously led the effort on the small project in Hatfield and who has become informally involved in the IEA Task. The Chief Engineer and Analyst will be Mr. Dwayne S. Breger who will join the University in a Department Staff Position. Mr. Breger has been the Expert Analyst for the U.S. Participation in the IEA Task since 1982 and has performed the previous analytical studies of CSHPSS in Massachusetts, New England, and other U.S. locations. The effort will be assisted by a Graduate Student in the Department.

The effort will also include assistance by the Department of Physical Plant to provide required data and engineering expertise for system integration with the existing facilities. The Department of Geology will provide data and guidance regarding the geological conditions in the immediate campus area. Dr. Charles A. Bankston, CBY Associates, Inc., Washington, D.C. is the Principle U.S. Participant in the IEA Task and will provide expert consultation and a liaison with the international Task experts.

A preliminary evaluation of the UMass campus has indicated that important opportunities for effective CSHPSS projects exist. Several major dormitory areas have been targeted as heating loads with the low-temperature characteristic beneficial to the solar and storage systems. Three major storage alternatives are available for consideration. In separate regions of campus are available distinct geological formations including accessible bedrock, a 100 foot thick clay layer, and a promising aquifer. Each geology offers an opportunity for seasonal thermal energy storage which has been thoroughly evaluated, modelled, and practiced within the international community.

The proposed project is separated into two Phases each lasting one year. The breakdown of each Phase into the major Tasks to be performed is summarized in Table 1. The Phase I effort would thoroughly evaluate and compare the

available alternatives on campus and provide a basis for system selection to be the subject of the Phase II design. The comparative analysis of the Phase I alternatives will be a unique study due to the geological variability and will be of great value for understanding and developing future project sites in the U.S.

Table 1. Proposed Work Plan

PHASE I. EVALUATION OF ALTERNATIVES

Task 1. Site Data Collection
  1a. Building Data - Loads, Temperatures
  1b. Geological Data

Task 2. Parametric Description of System Alternatives

Task 3. Performance Analysis of Alternatives

Task 4. Component/Sub-System Cost Evaluation

Task 5. Economic Analysis and Comparison of Alternatives

Task 6. Preparation of Phase I Report and Recommendations

PHASE II. DESIGN AND ENGINEERING STUDY OF SELECTED ALTERNATIVE

Task 1. Design and Specifications for Collector Array

Task 2. Design and Specifications for Storage Sub-System
  2a. Geological Testing of Storage Region
  2b. Design and Cost Specifications

Task 3. Design and Specifications for Heat Delivery System

Task 4. Sub-System Integration

Task 5. Design of System Control and Operation and Maintenance Plan

Task 6. Summation of System Design and Cost Specifications

Task 7. Detailed System Economic Characterization
  7a. Cost/Savings, Payback Specification
  7b. Discussion of Alternative Financing Processes

Task 8. Preparation of Phase II Report and Recommendations
  Preparation for Construction Planning (as required)

Table 2. Proposed Budget (Tentative)

PHASE I. EVALUATION OF ALTERNATIVES	
Principle Investigator[a] (J.E. Sunderland)	$10,000
Chief Engineer/Analyst (D.S. Breger)	$35,000
Graduate Student	$9,000
External Consultant (C.A. Bankston)	$5,000
Fringe Benefit[b]	$7,000
Hourly Support	$3,000
Travel	$3,500
Computer	$3,000
Supplies	$1,200
Miscellaneous (phone, computer enhancement)	$1,000
SUBTOTAL	$77,700
University Overhead (50%)	$38,850
TOTAL	$116,550

PHASE II. DESIGN AND ENGINEERING OF SELECTED ALTERNATIVE	
Principle Investigator[a] (J.E. Sunderland)	$10,000
Chief Engineer/Analyst (D.S. Breger)	$36,000
Graduate Student	$9,000
External Consultant (C.A. Bankston)	$5,000
Geological Test Drilling	$7,000
Fringe Benefit[b]	$7,200
Hourly Support	$3,500
Travel	$3,500
Computer	$3,000
Supplies	$1,400
Miscellaneous (phone, computer enhancement)	$500
SUBTOTAL	$86,100
University Overhead (50%)	$43,050
TOTAL	$129,150

Notes:

a) 1/4 time during academic year at no cost to contract
1/2 time during non-academic year covered by contract

b) as per University for salary of Chief Engineer/Analyst (20%)

Phase II effort will concentrate on design and engineering tasks to develop the selected system alternative. The effort includes a preliminary geological test of the storage region to confirm the site selection and to provide data for more detailed design. This Phase II effort will be the first detailed engineering of a major CSHPSS project in the U.S. and will clarify many issues regarding sub-system costs and component selection. The results of this Phase will be a detailed system specification with detailed performance and economic information. Based on these results, a decision to proceed with system implementation will be made by appropriate officials. Formation of capital for system construction using government and/or private financing mechanisms can be investigated to assist the decision process.

The status of the effort will be continuously shared with University and other officials. The results of each Phase will be carefully documented in University reports and will be presented at major technical conferences and discussed with appropriate industry and government offices.

4. PROPOSED BUDGET

The proposed support needed to carry out this project is $116,550 for Phase I (first year) and $126,150 for Phase II (second year). The breakdown of this cost is given in Table 2. The figures presented are considered tentative at this time subject to formal University review, but are expected to be quite accurate.

Cost-sharing by the University is to be included in this effort to cover a large portion of Professor Sunderland's time and for assistance from the Department of Physical Plant and Department of Geology.

STATEMENT OF THE NATURAL RESOURCES DEFENSE COUNCIL, INC.

My name is Thomas B. Cochran. I am a Senior Staff Scientist with the Natural Resources Defense Council (NRDC). I hold a Ph.D in Physics from Vanderbilt University, and was a member of the Department of Energy's (DOE) Energy Research Advisory Board (ERAB) from 1978-1982; DOE's Nuclear Proliferation Advisory Panel (1977-79); and the Nuclear Regulatory Commission's Advisory Panel for the Decontamination of the Three Mile Island Unit 2 (1980-1986). While on the ERAB I was a member of the Advanced Isotope Separation Study Group (1982) which reviewed the DOE Advanced Isotope Separation Program including the Laser Isotope Separation (AVLIS) Process. Consequently, I have some knowledge of the Special Isotope Separation (SIS) technology. I am also editor and co-author of the Nuclear Weapons Databook, Volume II, "U.S. Nuclear Warhead Production," and Volume III, "U.S. Nuclear Warhead Facility Profiles," which will be released by Ballinger Publishing Co. in April. Therefore, I am quite familiar with the DOE programs for providing plutonium to meet perceived nuclear weapons needs.

Joining me in this statement is Dan W. Reicher, an NRDC attorney. Mr. Reicher holds a J.D. from Stanford University Law School and was a staff member of the President's Commission on the Accident at Three Mile Island.

The Natural Resources Defense Council is a national non-profit environmental organization with almost 70,000 members. NRDC has been working for the past 15 years to ensure the safety of DOE's nuclear weapons production facilities, prevent the proliferation of nuclear weapons, and halt the use of weapon-usable plutonium in civilian commerce. We are pleased to have this opportunity to present our views concerning the Special Isotope Separation facility DOE proposes to develop at the Idaho National Engineering Laboratory. After careful analysis we find that the proposed SIS is uneconomical, unnecessary, and poses serious health and proliferation risks. We urge the Subcommittee to eliminate funding for the project in FY88.

DOE currently advances two reasons for full-scale deployment of SIS. The primary reason is to produce weapon-grade plutonium from DOE's current inventory of fuel-grade plutonium, most of which is at DOE's Hanford Nuclear Reservation. A secondary reason is to separate plutonium isotopes -240 and -241 from existing weapon-grade plutonium to reduce radiation exposure of personnel who handle the weapons. Neither of these uses for SIS justifies its almost $1 billion price tag, the risks the facility poses to human health and the environment, and the damage SIS would do to efforts to prevent the spread of nuclear weapons to nations currently without them.

DOE's use of SIS to convert fuel-grade plutonium to weapon-grade plutonium is not cost effective and therefore cannot be justified. As shown in Tables 1 and 2, by the time the facility comes on line in 1995 or later, DOE will have at most about 6 MT of fuel grade plutonium available for SIS enrichment. This constitutes only a two-year supply of feed material were the SIS facility to operate at full capacity (approximately 3 MT/yr). This could be stretched to four years if the plant operated at a reduced capacity during start-up. This can be seen by the following analysis.

DOE's fuel-grade plutonium inventory was 16 metric tons (MT) in 1983. Of this, some 4 MT was obtained from the United Kingdom under a barter agreement. The British government was given assurances that this 4 MT would not be used for weapons. Each year since 1983 on average about 0.5 MT of the remaining 12 MT of this material is available for blending with supergrade plutonium (3% Pu-240) from the Savannah River Plant, South Carolina to produce weapon-grade plutonium. (See Table 1). This is based on the assumption that the Savannah River Plant (SRP) C-Reactor remains permanently shutdown. So each year the stockpile of fuel-grade plutonium available to feed the SIS declines significantly leaving about 6 MT in 1995.[1]

If DOE were simply to continue its blending process rather than develop SIS to produce weapon-grade plutonium, we estimate that the fuel-grade plutonium stockpile at Hanford would be exhausted by about 2006. (See Table 1.) The time of depletion would be moved forward to about 2002 if the C-Reactor were restarted by 1990. If the SIS plant comes on line in 1995 and operates at 25% capacity in the first year, 50% in the second and 75% in the third, the 6 MT inventory will be exhausted in 1998. (See Table 2). Consequently, at most, the SIS plant will accelerate the availability of the fuel-grade stocks for weapons by 4 to 8 years. This is based on the assumption that development of the SIS plant does not continue to slip. This is an extraordinarily optimistic assumption considering development has already been delayed at least five years.

In sum, the question which must be confronted head-on is not whether DOE will be able to produce additional weapon-grade plutonium from existing stockpiles of fuel-grade plutonium, but whether the slightly higher rate at which the existing stockpile of fuel-grade plutonium is processed is justifiable in view of: (1) the higher cost of SIS compared to blending; and (2) the grave health, environmental and proliferation risks posed by SIS. To place this in perspective, the 6 MT fuel grade inventory in 1995 will represent about 5 percent of the some 120 MT plutonium inventory in the U.S. weapons stockpile. DOE can increase this inventory incrementally at a rate of 1.4%/yr. using SIS or 0.5%/yr. by blending. There is no conceivable national

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[1] The analysis presented here was conducted prior to the recent power reductions at three of four SRP reactors. These temporary reductions may affect the availability of super-grade plutonium for blending. However, the effect will probably be negligible given that DOE intends to increase power in the reactors following installation of new safety equipment this year. Moreover, recent information indicates that the Department may be able to correct problems with the C-Reactor and put it back on-line.

Table 1

INVENTORY OF DOE FUEL GRADE PLUTONIUM FOR BLENDING

FY	SRP Reactors Producing Supergrade Pu[a]	Annual Supergrade Pu Produced[b] (Kg)	Annual Supergrade Pu Separated[c] (Kg)	Annual Fuel Grade Pu Required[d] (Kg)	Available Fuel-Grade Pu Inventory[e] (Kg)
1981	0.6	250			
1982	1.0	540	400	200	
1983	2.0	1,070	800	400	12,000
1984	2.0	1,100	1,085	540	11,460
1985	2.0	1,010	1,055	530	10,930
1986	2.8	1,425	1,220	610	10,320
1987	2.1	1,075	1,250	625	9,695
1988	2.0	1,030	1,050	525	9,170
1989	2.0	1,000	1,015	510	8,660
1990	1.7	860	930	465	8,195
1991	1.1	550	1,410	705	7,490
1992	1.3	650	600	300	7,190
1993	1.6	820	735	370	6,820
1994	1.5	770	795	400	6,420
1995	1.7	725	750	375	6,045
1996	1.6	820	770	385	5,660
1997	2.2	1,125	970	485	5,175
1998	2.3	1,170	1,150	575	4,600
1999	2.2	1,125	1,150	575	4,025
2000	2.2	1,125	1,125	575	3,450
2001	2.2	1,125	1,125	575	2,875
2002	2.2	1,125	1,125	575	2,300
2003	2.2	1,125	1,125	575	1,725
2004	2.2	1,125	1,125	575	1,150
2005	2.2	1,125	1,125	575	575
2006	2.2	1,125	1,125	575	0

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[a] Assumes C-Reactor permanently shutdown in FY 1986. P-, K-, and L-Reactors available for tritium and supergrade plutonium (3% Pu-240) production. For FY 1986-99 the number of reactors dedicated to tritium production is given in J. S. Allender and L. M. Macafee, "Economic Analysis of the Fuel Production Facility," OPST -84, -420, pp. 5, 24 and based on the projected tritium requirements given in the 1984 Nuclear Weapons Stockpile Memorandum.

[b] See Nuclear Weapons Databook, Volume II, U.S. Nuclear Warhead Production, Ballinger Publ. Co., 1987 (in press), p. 63.

[c] Assumes 6 month cooling period.

[d] Assumes blending 2 parts supergrade Pu (3% Pu-240) and 1 part fuel-grade Pu (12% Pu-240).

[e] Assumes 31 March 1983 inventory of 16.13 MT, of which some 4 MT is of British origin and unavailable for weapons. See Nuclear Weapons Databook, Volume II, p. 77.

Table 2

INVENTORY OF DOE FUEL-GRADE PLUTONIUM FOR SIS

FY	Annual Fuel Grade Pu Required[a] (Kg)	Available Fuel-Grade Pu Inventory[b] (Kg)
1995	750	5,670
1996	1,500	4,170
1997	2,250	1,920
1998	3,000	0

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[a] Assumes plant capacity of 3 MT. Start-up capacity of 0.25, 0.5, 0.75, full in years 1 through 4 respectively.

[b] Inventory in FY 1994 from Table 1.

security argument that can be made in 1987 for favoring the higher rate.

We believe that in view of these factors SIS cannot be justified. We find support for this conclusion in a 1985 report by President Reagan's Office of Management and Budget which seriously questioned the need for SIS saying:

> The SIS process has the highest cost (in total dollars and in dollars per gram of additional plutonium) of the various methods of increasing productivity. The SIS process also requires the most lead time and is the most technologically uncertain.2/

As we noted earlier, DOE's secondary reason for development of SIS is to remove certain isotopes from existing supplies of weapon-grade plutonium to reduce radiation exposure incurred by workers who handle nuclear weapons. DOE claims that without SIS, military personnel will be unnecessarily exposed to radiation. However, DOE fails to consider whether a reduction in the dose can be justified under the As Low As Reasonably Achievable (ALARA) principle and, assuming it can, the fact that reduced

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2/ Nuclear Weapons Databook Vol. II, at 97, note 233.

exposure can be achieved at a much lower cost through shielding.

Our analysis and that of the Office of Management and Budget lead, then, to the conclusion that SIS is not justifiable on the bases currently offered by DOE. Aside from these bases and pressures brought by a large cadre of scientists and engineers who have built their careers around SIS, why is DOE spending almost $1 billion to develop SIS? A careful reading of testimony DOE has given to Congress on SIS reveals that DOE's real reason for full-scale deployment of SIS is to be able to provide rapidly a large-scale plutonium production capability -- a so-called "surge capacity" -- which could be called upon in the event of a rapid buildup in Soviet nuclear weapons. Since there will be little in the way of DOE fuel-grade plutonium to satisfy this surge capacity, DOE clearly has its eyes on the only other large source of plutonium for the weapons program, namely spent fuel from commercial nuclear reactors. As early as 1981, then-Secretary of Energy Edwards endorsed the use of commercial spent nuclear fuel as a source of plutonium for the weapons program in a speech before the DOE Energy Research Advisory Board. The Secretary stated that such a move would provide the plutonium needed for both the weapons program and the breeder reactor program. He also claimed that it would solve the nuclear industry's waste disposal problem.

SIS, then appears to be part of a larger plan to provide surge capacity using commercial spent fuel. Critical to this plan is the PUREX processing plant at Hanford which can extract plutonium from spent fuel for later enrichment in the SIS. DOE renovated and reactivated PUREX in 1983 and is currently making an extensive additional modification which will allow spent fuel rods from the Fast Flux Test Facility, and therefore from commercial power reactors as well, to be cut into small segments for processing. Conveniently, DOE will also become the owner of all the commercial spent fuel in the United States in 1998, pursuant to a series of contracts it has entered into with nuclear utilities. DOE is also developing plans to build a Monitored Retrievable Storage (MRS) facility to store spent fuel.

So by 1998, when we estimate DOE will begin to exhaust its supply of fuel-grade plutonium to feed the SIS facility, the DOE will hold title to virtually all the commercial spent fuel in the U.S., and will have in place all the technology it needs to mine plutonium from commercial nuclear power plants for the bomb program.

All that will stand in DOE's way is the Hart-Simpson-Mitchell amendment to the Atomic Energy Act which was enacted by Congress in 1982 and prohibits the use of spent commercial fuel for the production of nuclear weapons. But, as of the late 1990's, with the technology in place to reprocess commercial spent fuel, and a likely reduction in plutonium production capacity as a result of the inevitable closure of the Hanford N-Reactor and delayed development of a New Production Reactor, Congress may feel irresistible pressure to repeal the Hart-Simpson-Mitchell amendment. As one of DOE's own physicists has commented:

> [r]egardless of the law, there will be a strong incentive to use the spent fuel rods from power plants to obtain plutonium for weapons. The Reagan administration has proposed a great increase in [the] number of nuclear warheads. This will require a large amount of plutonium. This is a scarce material. If a cheaper source of it is found, I'm quite sure they will make every effort to get at it. Seattle Post-Intelligencer, Aug. 28, 1983 at A1, A10.

So what's wrong with the use of SIS to mine commercial spent fuel for plutonium? In a word, everything. If implemented it would end almost four decades of careful separation of military and civilian nuclear programs. By essentially turning our commercial nuclear power plants into bomb factories, the U.S. would encourage other nations to use their civilian nuclear programs for military purposes. Using SIS to dismantle the wall between the peaceful and the military use of the atom would be an international tragedy of great proportions.

A decision to direct American civilian nuclear fuel to weapons use would also raise serious questions as to whether we will ever be able to put a lid on the nuclear arms race. The current U.S. inventory of weapon-grade plutonium now in or available for use in nuclear weapons is about 100 MT. By mining the plutonium in spent commercial nuclear fuel, DOE would be able to increase rapidly the plutonium inventory in the U.S. weapons stockpile by over 50 percent.

Because plutonium can be used for the manufacture of nuclear weapons, it is a prime target for diversion by people from both within and without an SIS facility. It is, therefore, imperative that we minimize the number of facilities and people who handle plutonium. Thus, SIS should not be built unless it is absolutely necessary and, as we have demonstrated, SIS is not necessary to further DOE's publicly stated objectives.

Additionally, DOE simply does not have a track record which demonstrates its capability to safeguard SIS plutonium production adequately, that is: to strictly control the plutonium production process; to account for all quantities of plutonium at each stage in the process; and to ensure the physical security of the site.. Just five months ago the plutonium reprocessing plant at Hanford was shutdown for, among other things, serious violations of rules designed to prevent theft of plutonium by terrorists. The facility for assembling complete nuclear devices at the Los Alamos National Laboratory was permanently closed a few years ago because of DOE's inability to provide adequate safeguards. And recently the security forces at the Savannah River Plant were shown to be inadequate to repel even a mock terrorist raid on the facility. These and numerous other lapses demonstrate that DOE has serious and continuing problems in safeguarding plutonium. The question, then, is whether we should be adding an unnecessary and economically unjustifiable facility to this troubled system.

We must also consider carefully the highly toxic nature of plutonium. In recent statements DOE has attempted to minimize the health and environmental risks posed by plutonium. However, DOE's own documents recognize that plutonium's long-lived radioactivity and its radiotoxicity combine to make it an exceedingly "potent cancer producer."[3/] DOE-funded experiments with beagle dogs demonstrate that inhalation of less than one microcurie of Pu-239 oxide result in an incidence of lung cancer approaching 100%.[4/] In an SIS production facility able to vaporize 2 to 3 tons of Pu a year (several hundred billion microcuries), there is the potential for severe health effects.[5/]

DOE stresses that through "proper actions" the health and environmental risks of plutonium can be minimized. However, DOE's operation of its facilities does not leave us with much faith that the Department is capable of assuring that these proper actions are taken. Numerous Congressional hearings have revealed DOE's for human health and the environment at its facilities around the nation. Much of this history of abuse and neglect stems from the unregulated status of the DOE facilities. Unlike commercial nuclear plants which are licensed and overseen by the Nuclear Regulatory Commission, DOE runs its own show. Thus the same agency which produces plutonium and disposes of some of the most toxic materials known to man also oversees the safety of its facilities. As Congressman Wyden of Oregon put it, this is akin to letting Dracula guard the blood bank. We believe that if DOE is permitted to go forward with development of SIS, the facility must be subject to full licensing and oversight by the Nuclear Regulatory Commission.

In summary, the SIS facility is uneconomical, unnecessary and poses serious health and proliferation risks. It should not be built. If it is built, it should be licensed and overseen by the Nuclear Regulatory Commission.

[3/] Rocky Flats FEIS, DOE/EIS-0064, Vol. 2, G-3-1.

[4/] J. F. Parks, "Inhaled Plutonium Oxide in Dogs," Pacific Northwest Laboratory Annual Report for 1985 to the DOE Office of Energy Research, Part 1, Biomedical Sciences, February 1986, pp. 3-17.

[5/] There are 16 micrograms of Pu-239 per microcurie.

STATEMENT OF DR. HOWARD E. SIMMONS, VICE PRESIDENT, CENTRAL RESEARCH AND DEVELOPMENT, E.I. DU PONT DE NEMOURS & CO., INC.

I am Howard Simmons, Vice President for Central Research and Development of the du Pont Company, and currently a member of the Science Advisory Board of the Council for Chemical Research. It is a real privilege for me to testify before this distinguished Committee, and to tell you of the excitement felt by those of us involved in the modern state of chemistry and chemical engineering. My purpose is to bring you the views of the Council for Chemical Research on the Department of Energy's Basic Energy Sciences budget request.

The Council has worked since 1979 to strengthen the academic and industrial base for U.S. competitiveness, by improving the interactions between academia and industry and by improving support for basic research in chemistry and chemical engineering. Our members are the 150 universities where nearly all the U.S. academic research in thesse fields is done, and the 42 major companies which carry out 75% of the corresponding industrial research.

That we and our predecessors have had some success is attested to by the chemical industry's employing of a million people, and our industry's positive international trade balance of over $7 billion. Recent advances by chemists promise more, as typified by the last few months' revolutionary discoveries of materials which are super-conducting at far more practical and economical temperatures, no longer requiring liqued helium cooling.

Nothing is more critical to the long-term health of our technological society than advanced, usable knowledge and the continued availability of abundant, clean energy sources. Changes in these sources are clearly ahead, as world petroleum production will peak and then decline, beginning near the turn of the century, probably a mere 13 years down the road.

Currently, some 92% of our energy consumption is based on chemical process technologies. This will continue to be the case for many more decades. In every one of the foreseeable alternative mixes of petroleum, natural gas, coal, oil shale, nuclear, solar and geothermal energy, developments are needed in which chemistry and chemical engineering play a dominant role. The same is true of energy conservation.

An example is that future resources will include coals and other fuels with lower energy and higher sulfur content. In order to have acceptable prices for producing, cleaning, converting and burning those fuels, and to do so with minimal environmental harm, more knowledge of chemical reactivity is required.

There are many other examples of the central role of chemical technology in future energy systems. One is the possibility of photochemically splitting water with sunlight, to form the cleanest fuel of all, hydrogen. Catalysis is important here, as it is in the other fuel technologies mentioned above.

For a long time to come, combustion will be dominant in our use of energy. Combustion occurs in a wide variety of systems, each having its own fast chemistry and needing new chemical insights to control it for efficiency and cleanliness.

Two reasons compel the strong interest of the Council for Chemical Research in DOE's Basic Energy Sciences program. First, the continued success of the U.S. economy, and the chemical industry's continued positive contribution to the trade balance, will depend on plentiful energy and on new chemical knowledge of the kinds generated by that program.

Equally important is our excitement over today's opportunities for advances in the chemical sciences, detailed in a study just over a year ago by the National Academy of Sciences[1]. Modern chemistry is bursting with new insights and techniques which, if pursued, promise great strides in scientific understanding and usefulness to society.

We have two reactions to the Basic Energy Sciences request for FY 1988.

One is that it properly and usefully seeks to strengthen research in the chemical sciences. After allowing for a small increase in the cost of doing research, however, less than $4 million is left for the enhancements. Nonetheless, it is encouraging that The DOE-requested enhancements of the Chemical Sciences part of Basic Energy Sciences are in the Academy's recommended areas of chemical reactivity, chemical catalysis, and analytical speciation. These are clearly central for future energy systems.

The other reaction relates to the inclusion in The Chemical Sciences budget, especially in its now-included former Nuclear Sciences program, of a heavy component of funding for operation of major facilities. Some $36 million, or 29% of its total operating funds request, goes into running major facilities, which serve research needs well beyond the field of chemistry. These facilities are important and useful, but they should be kept in mind because they affect the bottom line, giving the appearance, at first glance, that more funds go to the conduct of research in chemistry than is actually the case.

Because the nation's future depends strongly on clean, abundant energy, which is in turn strongly dependent on new chemical knowledge, we applaud the fact that at least some additonal funding for chemistry has been recommended and urge continued attention to the vital contributions chemical research can make to energy security. No investment could be better targeted for U.S. security, competitiveness and deficit reduction.

The Council for Chemical Research would like to thank you, Mr. Chairman and Members, for this opportunity to testify for you today.

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[1] "Opportunities in Chemistry," National Academy Press, 1985.

SUMMARY

The Council for Chemical Research (CCR) represents the 192 major companies and universities which carry out the bulk of U.S. industrial and university research in chemistry and chemical engineering. CCR was organized in 1979 to strengthen industry-academia cooperation for a stronger economy and a more competitive nation. We represent an impressive success story.

Knowing that global petroleum resources will soon dwindle, CCR is concerned about the long-range needs for new energy sources which will be economical and clean, and for new means of energy conservation. The necessary knowledge, not now in hand, will take time to discover.

A central fact: over 90% of U.S. energy consumption depends on chemical process technology. This will be true for decades to come. But to make that future affordable and clean, much more chemical knowledge is needed.

The chemistry part of DOE's basic research should be augmented to fit this reality.To assure an acceptable energy future for the nation, the full range of advanced research opportunities for energy-supporting chemistry must be entered.

STATEMENT OF THE AMERICAN WIND ENERGY ASSOCIATION

Mr. Chairman and members of the subcommittee, the following testimony is respectfully submitted on behalf of the American Wind Energy Association (AWEA) and its members by Thomas O. Gray, AWEA's Executive Director. We appreciate the opportunity to comment on the Fiscal Year 1988 budget request of the U.S. Department of Energy for wind energy research and development.

AWEA is a trade association which represents the manufacturers of wind electric turbines and components. About 150 companies are members of AWEA. While many are small businesses, a few large integrated corporations such as Boeing Aerospace Corporation are also among our members.

Our testimony basically emphasizes three points:

1. Despite a major setback last year -- the decision of the Congress to allow renewable energy tax incentives to expire -- the American wind energy industry is continuing to develop an increasingly mature energy-producing technology.

2. Because of the perception that America's energy problems are over, our industry is entering a critical phase of perhaps several years during which its survival is at risk.

3. A balanced, moderately aggressive federal wind research program is essential at this time, and our Association is working closely with the Department of Energy to ensure that its program is properly directed and relevant to industry's needs.

We would like to elaborate on these points.

1. Despite a major setback last year -- the decision of the Congress to allow renewable energy tax incentives to expire -- the American wind energy industry is continuing to develop an increasingly mature energy-producing technology.

Our industry absorbed a major blow in 1986 when the Congress decided not only to allow the 15% renewable energy investment tax credit to expire, but also at the same time to repeal the basic 10% investment tax credit.

This decision probably would have destroyed the wind energy industry in the United States if the economics of the technology had been less promising. Like other renewable energy technologies, wind energy suffers from a high initial capital cost compared to conventional energy technologies, and the investment credits were an ideal incentive.

As it is, the pace of wind energy's growth slowed sharply. The total capacity of new wind turbines installed in 1986 dropped to about 200 megawatts (MW) from approximately 500 MW in 1985, a 60% reduction after four straight years of exponential growth. We expect about the same total -- 200 MW -- to be installed this year.

The total number of new turbines installed sustained a similar drop, to about 2,000 from about 4,000 a year earlier, and new capital investment also dropped, to approximately $200 million from an estimated $750 million in 1985.

Nevertheless, our Association continues to see indications that wind energy technology is continuing to mature:

- Energy production per kilowatt (kW) of installed capacity rose from 660 kilowatt-hours (kWh) in 1985 to an estimated 980 kWh, an increase of nearly 50%, and a further substantial improvement is expected this year.

- Productivity per turbine also rose, from 75,000 kWh in 1985 to an estimated 97,000 kWh in 1986.

- At the end of 1986, our industry could look back with some satisfaction on a fifth consecutive year of increased capacity and increased productivity, which combined to bring about another massive jump in total wind electric power production. Total windfarm power output rose from 670 million kWh in 1985 to an estimated 1.2 billion kWh in 1986, an 80% increase.

- About 2 million barrels of oil would have had to be burned to produce the same amount of electricity as the windfarms did in 1986, and by year's end, the cumulative savings from wind totalled nearly 4 million barrels.

- While the indicators of production climbed, wind energy's installed costs plummeted, dropping by nearly 50% in 1986.

- Since the "fuel" for a wind turbine is free, the operating costs (Operations & Maintenance costs plus fuel) for a wind power plant remain well below those for any conventional energy source.

- The total levelized cost of power from windfarms, at 7-8 cents per kilowatt-hour, has fallen below the cost of power from new California nuclear power plants, which is in the neighborhood of 11 cents per kilowatt-hour.

In short, after a decade of development and learning experience, wind energy continues today to look like one of the outstanding winners among the new energy sources which the Science and Technology Committee identified for targeting federal research efforts in 1974.

It is important to understand that wind energy's forward progress has not always been smooth. Harnessing the wind has proven to be a surprisingly difficult technical challenge.

The force which the wind creates on an object in its path is a function of the cube of the wind speed, so that the forces working on a wind turbine increase geometrically as the wind rises. Also, the wind is often very turbulent, changing direction and speed quite rapidly. For example, a doubling in speed and change in direction of 45 degrees in less than one second is not uncommon.

This high variability means that a wind turbine operates in a very difficult environment which was not originally well understood.

It was originally thought that the aerodynamics of helicopter blades and airplane propellers would be readily applicable to wind systems. That has not proven to be the case. Wind turbines are different and require very different airfoil shapes.

Early analyses also assumed, for lack of better information, that the wind's flow would be relatively smooth. That, too, was mistaken. The physical stresses which a wind turbine undergoes in actual operation were often several orders of magnitude greater than those predicted by engineers.

And finally, fatigue remains one of the most difficult and elusive problems in wind turbine design. Wood-epoxy laminates and composites are the materials of choice for wind machine blades, and little useful fatigue information is available even today for these materials.

2. Because of the perception that America's energy problems are over, our industry is entering a critical phase of perhaps several years during which its survival is at risk.

Despite the technological and commercial progress our industry has made, its survival today and in the near term is threatened by a series of unfavorable developments:

- Federal government support for wind energy has been dramatically reduced. The energy investment credit and the basic investment credit totalled approximately $200 million in support during calendar 1985, their last year of existence -- an amount more than 10 times last year's federal wind research and development (R&D) budget. Thus wind energy is unique among the renewable energy industries in having lost over 90% of the overall share of the federal budget which it held just over a year ago.
- Oil prices, after dropping sharply a year ago, have remained weak and are only now beginning to show some signs of recovering.
- The Federal Energy Regulatory Commission (FERC) has recently announced its intention to review certain key areas of the Public Utility Regulatory Policies Act of 1978 (PURPA), which guarantees windfarms a market for the power they produce.
- The Administration, for reasons with which we are all familiar, is continuing to propose drastic cuts in wind energy research at a time when other countries, in particular Denmark and the Netherlands, are increasing government support for their wind energy industries.

To these factors which are mostly outside our industry's control and which create doubts today about its future must be added one more.

Both American manufacturers and the U.S. federal wind energy program were strongly influenced initially by the notion that wind systems could be made most economical by incorporating advances in materials and aerodynamics from the aerospace industry.

Our chief world competitor, the Danish wind industry, chose instead to draw upon its own past experience in the use of wind machines as agricultural equipment, making them sturdy, bulky and heavy.

Thus American machines today tend to be much lighter and more technically advanced than Danish turbines. In fact, they typically produce three to five (or even more) times as much electricity per pound of material. However, because of the unexpected problems with the wind discussed earlier, they have also been much more prone to failure and have required substantially more maintenance.

Although it seems clear that American wind systems have the potential to be cheaper than Danish units, that potential is still some distance from being realized, and the higher reliability of Danish machines has made it easier for them to obtain financing.

As a result, Danish units, according to our estimates, accounted for nearly two-thirds of the new wind machines installed in 1986 in the United States.

Thus today, despite the fact that some hundreds of millions of dollars have been expended on wind energy research in the U.S., and despite the fact that the global energy situation today is no more positive than it was a decade ago -- and indeed, in some respects, has deteriorated -- our industry's near-term survival remains an open issue.

3. A balanced, moderately aggressive federal wind research program is essential at this time, and our Association is working closely with the Department of Energy to ensure that its program is properly directed and relevant to industry's needs.

Last year in our testimony, we called for greater cooperation with the federal wind program, and I am pleased to report that the Department of Energy has responded.

In early December, AWEA's Research and Development Committee met for two days with wind program personnel and with representatives of the federal laboratories involved in the wind program to review current research projects and goals.

We had an excellent meeting with a lot of give-and-take, and we feel that significant progress was made toward our two key objectives, which were (1) promoting communication between industry technical experts and the wind program and (2) establishing industry's views on the most promising future directions for the program. Those views are reflected in the recommendations I am making here today.

We think the December meeting has laid the foundation for a much closer relationship between our industry and the federal program in the future, and we are looking forward to building a program that will maintain and, hopefully, extend America's lead in the technology of wind electric turbine design.

That being the case, we cannot endorse the Administration's proposal to cut wind energy research by approximately 50% to $8 million. As previously noted, total federal support for wind energy research and commercial development has been slashed by about 90% since the end of 1985, and research spending alone has been cut by more than 75% since the current Administration took office. We do not believe further reductions are in order.

Our recommendations to this Subcommittee call for approximately level research funding compared to last year, and we see this as a minimum figure for this program. At this level (about $17 million), wind energy, which could someday contribute as much energy to our national supply as hydroelectric power does today, will consume less than two one-hundred-thousandths (2/100,000) of the federal budget.

As to specifics of the program, our Research and Development Committee found the federal program's direction to be generally satisfactory. However, the we have identified several areas where we believe the research effort should be intensified and some other areas which we feel should have a lower priority.

Among our recommendations are the following:

(1) The federal program has devoted a number of years and sizable quantities of funds to development and testing of a variety of wind turbine designs. In addition, it has tested a

number of different wind machine configurations (e.g., different numbers of blades, different blade materials, etc.) on government-owned testbed units like the MOD-0 machine in Sandusky, Ohio. However, we believe an insufficient amount of effort has been devoted to taking the results of all of this testing and reviewing them critically to determine what can be learned about the best directions for wind turbine design.

We therefore recommend **increased support for design tradeoff studies which would review existing research data and draw conclusions about the most promising wind turbine design concepts.**

(2) While the federal program has concentrated almost exclusively over the past decade on the testing of individual wind turbines, commercial development has been based on the "windfarm" concept, with large numbers of turbines being installed at the same geographical location. That in turn has led to growing interest in the degree to which the electric power produced by windfarms is, or is not, fully compatible with utility grid requirements. Since utility acceptance of wind electric turbines is a major long-term prerequisite for wind industry growth, this issue is central to the industry's future.

We recommend that **increased effort be given to power quality research, to ensure that electricity produced by windfarms is of acceptable quality for utilities, particularly in areas where the percentage of wind electricity on the local utility grid is high.**

(3) A key area of the current federal research program which has been producing highly useful information is airfoil research. Wind turbine power output can be significantly improved, and maintenance costs lowered, if airfoil shapes can be found which are less affected by turbulence and surface degradation.

We recommend that **research spending on advanced airfoils be increased.**

(4) Another research area which has significant potential for increasing wind turbine power output and decreasing fatigue and maintenance is variable speed operation. Since the wind itself is variable, a wind turbine which can also operate at varying rpm will automatically experience less structural stress. Variable speed systems have been the most commercially successful of the very small (residential-sized) wind turbines, and it seems likely they would dominate at larger sizes as well if an economic variable-speed design could be identified.

We recommend **increased support for research on variable speed wind turbine generation.**

(5) The Solar Energy Research Institute (SERI) this year is beginning what is called the "Combined Experiment," which will look intensively at all aspects of operation of a single test wind turbine and attempt to correlate structural stress with wind inflow. If completely successful, it would allow us to find out exactly which wind conditions cause problems from a stress and fatigue point of view and to design for those conditions.

We recommend **increased funding for efforts to correlate wind inflow/turbulence and structural loads so as to identify key factors in wind turbine stress and fatigue.**

To maintain approximately level funding, we have also identified several areas where we believe spending can be reduced without compromising the wind energy research program, and those are included in the detailed budget recommendations which we will be providing to Subcommittee staff. We will also be advising staff of our detailed recommendations for funding at the level of $8.5 million requested by the Administration.

Again, we thank you for the opportunity to present our views, and we look forward to working with the Subcommittee to develop a sound and increasingly useful wind research program.

RECOMMENDATIONS OF AMERICAN WIND ENERGY ASSOCIATION FY 1988 U.S. WIND ENERGY RESEARCH BUDGET

Category	FY 1986 DOE Alloc.	FY 1987 DOE Alloc.	FY 1988 Admin Req.	FY 1988 AWEA Rec. Level	FY 1988 AWEA Rec. $8.5m
Aerodynamics (1)	1.2	3.2	2.4	3.4	1.8
Advanced Components (2)	1.0	1.7	2.2	2.5	1.9
Structural Dynamics (3)	1.4	2.2	2.4	2.6	1.3
Atmos. Fluid Dynamics	1.1	1.1	1.0	1.0	0.4
Supporting Research (4)	2.2	2.0	2.1	3.0	1.2
University Research	0.2	1.0	0	1.0	0.5
MOD-5	12.0	4.5	0	2.0	1.0
Existing Commitments	5.9	0	0	0	0
Other	0	0.9	0.9	0	0
Capital Equipment	0.8	0.2	0.4	0.4	0.4
TOTAL	25.8	16.8	8.5	16.8	8.5

Highlights of AWEA Recommendations

(1) Aerodynamics: Additional funds provided for Cooperative Research Program, which directs research toward actual problems experienced in field.

(2) Advanced Components: Increased funds for variable speed system research (major breakthrough potential) and airfoil development -- both viewed as critical to industry's future.

(3) Structural Dynamics: Increased funds for "Combined Experiment," an intensive look at wind inflows and structural loads to determine central causes of fatigue and failures.

(4) Supporting Research: Increased funds for (a) wind-diesel system research, (b) research into windfarm power quality issues, and (c) system design tradeoff studies.

(5) MOD-5 Advanced Multi-megawatt Turbine: Provides the modest funds needed to finish acceptance testing of machine in which tens of millions of federal dollars have already been invested.

SUMMARY OF AWEA RESEARCH & DEVELOPMENT COMMITTEE VIEWS ON FEDERAL RESEARCH PRIORITIES

Higher Priority

Supporting Research/Systems Analysis & Tradeoff Studies

Supporting Research/Windfarm Power Quality & Array Response

Advanced Components/Generic Airfoil Research

Structural Dynamics/Combined Experiment

Advanced Components/Variable Speed Systems Research

Lower Priority

Aerodynamics/Fundamental Research in Unsteady Aerodynamics

Atmospheric Fluid Dynamics/Flow & Performance Variability Research

Structural Dynamics/Fatigue Prediction & Crack Growth (i.e., metal fatigue)

Supporting Research/Aeroacoustic & Environmental Research (i.e., simple noise data collection)

RECOMMENDATIONS OF AMERICAN WIND ENERGY ASSOCIATION
FY 1988 U.S. WIND ENERGY RESEARCH BUDGET

Activity Element	FY 1986	FY 1987	FY 1988
AERODYNAMICS:			
Fundamental Research in Unsteady Aerodynamics	437	900	600
Cooperative Research	500	2000	2500
Update/Validate Aero Codes	250	300	300
TOTAL AERODYNAMICS	1187	3200	3400
ADVANCED COMPONENT RESEARCH:			
Variable Speed System Research	600	900	1500
Generic Airfoil Development	431	600	1000
Turbine Control	0	0	0
MOD-0 Takedown	0	230	0
TOTAL ADVANCED COMPONENTS	1031	1730	2500
STRUCTURAL DYNAMICS:			
Combined Experiment	0	500	1000
Fatigue Prediction & Crack Growth	500	700	500
Structural Loads Phasing Research	865	800	800
Materials Research	0	200	300
TOTAL STRUCTURAL DYNAMICS	1365	2200	2600
ATMOSPHERIC FLUID DYNAMICS:			
Refinement of Stochastic Turbulence Models	680	300	300
Aerometeorology Methods to Correlate Turbulence & Loads	0	200	200
Innovative Techniques to Characterize Turbulence	0	100	100
Flow & Performance Variability Research	200	200	100
Wakes & Micrositing	250	200	200
Mapping of Unsteady Rotor Induction Effects	0	100	100
TOTAL ATMOS. FLUID DYNAMICS	1130	1100	1000
SUPPORTING RESEARCH:			
Wind/Diesel	250	300	500

Activity Element	FY 1986	FY 1987	FY 1988
Aeroacoustic & Environmental Research	250	250	0
Planning & Assessments	500	700	700
Windfarm Power Quality & Array Response	110	100	500
Technology Transfer & Code Simplification	400	200	400
Technology Assistance Center	200	100	200
Voluntary Standards	175	200	200
Systems Analysis & Tradeoff Studies	275	150	500
TOTAL SUPPORTING RESEARCH	2160	2000	3000
TOTAL CAPITAL EQUIPMENT	800	170	400
TOTAL UNIVERSITY RESEARCH	200	1000	1000
TOTAL MOD-5	12000	4500	2000
TOTAL OTHER	0	850	850
TOTAL EXISTING COMMITMENTS	5927	0	0
TOTAL WIND RESEARCH BUDGET	25800	16750	16750

Summary by Major Category:

Total Aerodynamics	1187	3200	3400
Total Adv. Component Research	1031	1730	2500
Total Structural Dynamics	1365	2200	2600
Total Atmos. Fluid Dynamics	1130	1100	1000
Total Supporting Research	2160	2000	3000
Total Capital Equipment	800	170	400
Total University Research	200	1000	1000
Total MOD-5	12000	4500	2000
Total Other	0	850	850
Total Existing Commitments	5927	0	0
Total	25800	16750	16750

MEMO

February 4, 1987

MEMO

To: AWEA R&D Committee Members

From: Tom Gray, Chairman

Subject: Draft Budget Proposal - Testimony Outline

Enclosed you will find an initial draft budget proposal for the FY 1988 DOE wind energy research budget, which is based largely on the discussions at the committee meeting in December. I would appreciate any comments you may have on either or both.

Hearings before the two House of Representatives subcommittees that deal with the wind budget are scheduled beginning in mid-March. Therefore, please contact me by Friday, February 27, with any comments.

One specific item in the enclosed material which I would like to call to your attention is a proposal for two new machine development programs in the 200-500 kW range, described as "Cooperative Advanced Turbine Development" near the end of the budget proposal. I believe the time may be ripe for such an initiative to assist U.S. industry in regaining a more competitive position, and I invite your comments.

AMERICAN WIND ENERGY ASSOCIATION
OUTLINE OF TESTIMONY
FY 1988 DOE WIND RESEARCH BUDGET
February 3, 1987

1. Background

A. Industry continues to grow and mature. 200 MW of equipment installed in 1986, 1.2 billion kWh produced.

B. Continued commercial promise. Costs well below those of CA nuclear plants (Diablo Canyon), production moving into comparable range (San Onofre).

C. Industry continues to face serious problems:

i. Dramatic reduction in federal support. Was approximately $240 million in 1985 (including tax incentives), will be about $17 million in 1987. (We have already absorbed far greater reduction than Gramm-Rudman would dictate.) AWEA OPPOSES Administration proposal to cut research program by over 50%.

ii. Continued oversupply of oil on the world market, which reduces public and Congressional awareness of the need for new domestic sources of energy.

iii. Federal Energy Regulatory Commission is considering question of whether changes should be made in PURPA, which requires utilities to buy wind electricity at reasonable prices.

iv. Foreign competition increasingly severe. U.S.-built machines took only about one-third of the domestic market in 1986, despite the fact that U.S. continues to lead in wind energy technology.

2. Federal Program

A. AWEA pleased with general direction of federal program. Extensive meeting of R&D Committee with wind program and federal lab personnel in December, appears program is generally on track.

B. Meeting concluded several key issues need to be addressed which are important for future commercial development of industry:

i. Design tradeoff studies, to take data developed by decade of research and draw conclusions about most promising design directions.

ii. Power quality research, to ensure that the electricity produced by wind power plants is of acceptable quality for utilities.

iii. Airfoil research, to produce rotor blades that are less sensitive to turbulence and degradation by dust and weathering.

iv. Variable speed generation, to better fit wind turbines to the variability of the wind itself.

v. Combined experiment, to look thoroughly at the operation of a single machine in the field and explore its response to the wind.

C. AWEA also supports initiation of a new Cooperative Advanced Turbine Development program to take the lead in technical know-how we have and produce an "import-killer" that can compete effectively in the world market.

D. Other detailed recommendations presented to staff. AWEA supports level funding of $17 million for program in FY 1988.

DRAFT FUNDING RECOMMENDATIONS AND NOTES
FY 1988 DOE WIND BUDGET
February 3, 1987

Activity Element	FY 1986 DOE Alloc.	FY 1987 DOE Alloc.	FY 1988 AWEA Recom.
ATMOSPHERIC FLUID DYNAMICS			
Characterize Turbulence, Refine Turbulence Models, Correlate Turbulence and Loads	680	600	600
- Aero Panel recommended high priority.			
- AWEA Committee agrees necessary work.			
Flow & Performance Variability Research	200	200	100
- AWEA Committee divided over value of this area.			
Wakes & Micrositing Research	250	200	200
- AWEA Committee divided over value, but significant support from windfarm industry representatives.			
Mapping of Unsteady Rotor Induction Effects	0	100	100
- AWEA Committee agrees necessary work.			
TOTAL ATMOSPHERIC FLUID DYNAMICS	1,130	1,100	1,000
AERODYNAMICS			
Fundamental Research in Unsteady Aerodynamics	437	900	600
- Aero Panel recommended high priority.			
- AWEA Committee feels goals can be attacked in other ways (e.g., factors of safety).			
- Some dispute over degree to which unsteady effects affect turbine design, economics.			
Cooperative Research Program	500	2,000	2,500
- Strong support on AWEA Committee for program.			
- Program improves communication between government and industry, helps industry maintain research staffs.			

- Program should be expanded to include noise and environmental research.			
Update/Validate Aero Codes	250	300	300
- AWEA Committee agrees necessary work.			
TOTAL AERODYNAMICS	1,187	3,200	3,400

STRUCTURAL DYNAMICS

Combined Experiment to Correlate Structural Stress, Wind Inflow and Air Loads	0	500	750
- Aero Panel considered high priority.			
- AWEA Committee strongly supports.			
- Provides thorough look at wind inputs and structural outputs in a single, unified experiment.			
Fatigue Prediction & Crack Growth	500	700	500
- AWEA Committee feels work not directed at key problem area, which is effect of loads on fatigue.			
- More attention needed to fatigue prediction on composites.			
Structural Loads Phasing Research	865	800	800
- AWEA Committee agrees needed work, more directed at loads issue.			
Materials Research	0	200	0
- Program intended as one-year literature survey to collect published materials data from other disciplines.			
TOTAL STRUCTURAL DYNAMICS	1,365	2,200	2,050

ADVANCED COMPONENTS RESEARCH

Variable Speed System Research	600	900	1,500
- AWEA Committee strongly supports.			
- General view: research effort should be directed at range of turbine sizes.			
- Can lead to better turbine productivity, reliability, lower costs.			
Generic Airfoil Development	431	600	1,000
- AWEA Committee strongly supports.			
- Another element with direct impact on turbine reliability and costs.			
MOD-0 Takedown	0	230	0
TOTAL ADVANCED COMPONENTS RESEARCH	1,031	1,730	2,500

SUPPORTING RESEARCH

Wind/Diesel	250	300	500
- AWEA Committee divided over value.			
- Significant near-term market potential exceeds most other potential areas of wind energy applications.			
Aeroacoustic & Environmental Research	250	250	0
- AWEA Committee gave least support to this area.			
- Objectives can be better accomplished through Cooperative Research Program, since these issues arise in the field.			
- Problem also being addressed through voluntary standards work.			
Planning & Assessments	500	700	700
- AWEA Committee agrees necessary work.			
Windfarm Power Quality & Array Response	110	100	500
- AWEA Committee strongly supports.			
- Potentially major hurdle to acceptance of wind energy as utility generating option.			
Technology Transfer & Codes Simplification	400	200	400
- AWEA Committee agrees necessary work.			
- FY 1988 includes next Wind Workshop conference.			
- Information exchange vital to technology advancement.			
Technology Assistance Center	200	100	200
- Data and information collection will assist all researchers.			
- Institutions considering wind energy (e.g. World Bank, AID) need credible source of technical information.			
Voluntary Standards Support	175	200	200
- AWEA Committee agrees necessary work.			
- International standards activity increasing.			
Systems Analysis and Tradeoff Studies	275	150	500
- AWEA Committee rated highest priority.			
- Need to evaluate data produced to date and determine what it implies for future design and research directions.			
TOTAL SUPPORTING RESEARCH	2,160	2,000	3,000

COOPERATIVE ADVANCED TURBINE DEVELOPMENT	0	0	1,000

- Envisions funding of preliminary and detailed design of two advanced intermediate wind turbines (200-500 kW) on parallel contract basis with cost-sharing by industry.

- Total government funding requirement estimated at $8 million over three fiscal years.

- Intermediate turbines identified by Electric Power Research Institute, utility research arm, as most cost-effective option for near term.

UNIVERSITY RESEARCH	200	1,000	1,000

- AWEA Committee agrees necessary work.

- Increases general level of engineering competence in industry as new engineers enter field.

MOD-5	12,000	4,500	2,000

- Provides adequate funds to finish testing, plus provide for contingencies.

- $60-million-plus program should not be abandoned now that test turbine is finished and ready for testing.

CAPITAL EQUIPMENT	800	170	200
OTHER	0	850	850
EXISTING COMMITMENTS	5,927	0	0
TOTAL WIND RESEARCH BUDGET	25,800	16,750	17,000

MEMO

January 12, 1987

MEMO

To: AWEA R&D Committee Members

From: Tom Gray, Chairman

Subject: Draft Minutes, Committee Meeting of December 9-10, 1986

Enclosed you will find a copy of draft minutes from the AWEA R&D Committee meeting in early December.

If you were able to attend the meeting, please look over the minutes and advise me of any corrections that are needed.

If you were unable to attend, I would appreciate any comments you may have on the subject matter that we discussed. To assist you, I have enclosed a breakdown provided by DOE of wind program funding for various program elements for FY 1986 and FY 1987.

Time permitting, I plan to:

(1) Circulate revised minutes to Committee members;

(2) Circulate a draft budget proposal for FY 1988 to Committee members;

(3) Circulate a draft of major points from AWEA's planned testimony to Committee members.

Since we will probably need to begin testifying by late February, we will have to move quickly to accomplish the above. Therefore, please contact me by the end of January with any comments, corrections or questions.

Draft Minutes
AWEA R&D Committee Meeting
12/9-10/86

General Q&A, 12/9

(Hansen) What, in DOE's view, is the single most important problem facing the industry?

> (Rogers) Increase energy capture, lower cost. There are a lot of specific needs across the industry [that will contribute to that goal].
>
> (Rogers) The order of the program elements [as they appear on the list] really reflects a consensus of the labs and ourselves and the inputs we have received from outside the Department.

(Gray) How is DOE's work coordinated internally, to avoid duplication?

> (Cadogan) We have an annual planning cycle. The Five Year Plan (FYP) is an attempt to structure the objectives and timetable "consistent with industry needs and Administration policy." [Administration policy =] High-tech "good", applied science "bad." We will soon be having a spring review, where we will go over problems and issues [of coordination]. Also, we have regular planning meetings.
>
> - Sandia, which has historically been the center for research on VAWTs, is gradually coming around to do more generic research.

(Doman) Do you get as much input from industry as you would like to have? This review process sounds a little like incest. Do you feel industry has yet to come back to you with a unified voice?

> (Cadogan):
>
> - Emphasis shift with new Administration in 1981. As tax credits came up, government program was to taper off.
>
> - We serve anyone who comes in with a question.
>
> - About the time of the FYP, this approach changed. We held Windpower 85 [in conjunction with AWEA] and Len Rogers went to the AWEA Conference this year in Cambridge.
>
> (Dyes) Industry played a significant role in the FYP.

(Thompson) There hasn't been much interaction with the hardware people in the field. I think there needs to be more of that. In the industry right now, there's very little support engineering.

> (Rogers) [That interaction, though,] Has to be planned. That's what the Cooperative Research Program (CRP) and Cooperative Field Test Program (CFTP) are all about. It all has to be planned. I can't just put [a pot of money] in a category and mark it "other" [and spend it on industry].

(Nelson) [What do you see] As the differences between the Danish and the US approach?

> (Rogers) We believe in "rugged individualism." We don't even go [with government funding] to the point of demonstrating a technology fully. [The Danes go much farther in assistance to the private sector.]

(Schienbein) I feel [we have] a need to learn from the thousands of machines that are already in the field. It's [not clear to me that] I even know the right questions [to ask]. Has there been any thought given to developing an industry cross-machine matrix of failure experiences?

> (Gray) We had some discussions some years ago about that idea, and the conclusion was that the companies would not be willing to share that information.
>
> (Schienbein) I believe our company would be willing to consider it now.

(Bergey) I feel left out. Who in this process looks at [equipment] outside the program? Looking through the summary of goals, [small systems have already reached them, for the most part].

> (Rogers) Will the people who built these machines fully disclose [the details of their construction] and allow the federal government to scale them up?
>
> We hope to discuss today [how realistic the goals are].

(Gray) Why has it taken so long to get all of the projects in the first round of the CFTP going?

> (Sargent) Various reasons. Westinghouse had a series of technical problems. Northern Power for some time didn't have a site, and their machine was not yet built.
>
> (Thompson) My understanding was that under the Solicitation for Cooperative Agreement Proposals (SCAP), you were supposed to have a backup machine.
>
> (Cadogan) There is one other alternative -- the NEF or "no exchange of funds" agreement -- under which a piece of research can get done more quickly.

(Hansen) What is the economic basis for further pursuit of the vertical-axis design?

> (discussion over value of cost estimates)
>
> (Schienbein) The cost of the FloWind VAWT is known, and FloWind has bet [that it will be competitive]. That's its position. But it's difficult to produce it and optimize it at the same time.
>
> (Clark) We've bought 10 machines, including both types, through a competitive bid process, and have found no real difference in cost.

(Gray) Could we talk briefly about one of the first questions in the background material from AWEA: Do we see government phasing out wind energy research at some point? Or is there a continuing role?

> (discussion)

Consensus: There will be a continuing role for government research in wind energy even after the industry becomes commercially viable, just as the government continues to sponsor research in air transport technology.

(Stoddard) Government shouldn't be designing wind turbine configurations with industry. It should be pursuing longer-range phased development such as airfoils that industry can get a handle on.

If government doesn't focus R&D, things like unsteady aerodynamics and new airfoil development won't be done except by trial and error.

(Bergey) [That may be, but] It's not dynamics problems that are putting people out of business. Trial and error is OK. The problem with long-term research is, it's always off the mark. Garbage in-garbage out is a SERIOUS problem.

(Stoddard) I think a major spinoff of the research program is a common language.

(Sherwin) (1) Poor management and (2) lack of capital [have been the major reasons for companies going under]. [We have an industry that's done] $1.4 billion in business, and its total equity capital pool is less than $60 million, half of that in one company.

(Thompson) Generally, American companies tried to use materials to build light wind turbines. The foreign competition didn't worry [about building light machines].

(Bergey) Pure theory is valuable, but I think [the real work that's needed is in] component engineering...unglamorous stuff [but crucial].

(Stoddard) I think it's dangerous to have the government proposing specific design changes, but GOOD to have it pointing to the right sources for information. [That can be a function of the] Design Assistance Center.

(Thompson) [We didn't have much contact with DOE for a while, but] Recently, we've been having more and more. I'm not asking for DESIGN information, but TECHNIQUE information.

(Sherwin) [If you need information and you know the program people, you can] find it on an individual level, but getting the documents and data out [in a timely way] is awful. [I feel we need more circulation of] Draft copies from time to time.

Discussion of Program Elements, 12/10

1. Fundamental Research in Unsteady Aerodynamics

"Dynamic stall and 3-D flow identified by ER Panel as critical to improving performance and reducing loads." FY 1986 funding $437,000, FY 1987 funding $900,000.

(Doman) Has this been put up against helicopter research in the same area?

> (Noun) Yes. Sandy Butterfield [WERC person working on this] has been to NASA-Ames to discuss their work.

(Doman) Well, unsteady aerodynamics people always want more money. The United Technologies lab is full of those guys. [Has there been any thought given to trying to identify those trends that appear to be emerging from our experience so far?]

(Stoddard) The Aerodynamics Research Panel essentially suggested [that more attention be given to this area, and] said it would not be productive to try to pick trend lines yet.

(Morita) We've been treating the turbine as a black box. We assumed airfoil technology could be [transferred from airplanes] to wind turbines. We've learned that's not so. The fluid physics are a lot more complex.

We're working on design tools for the next generation of machines...trying to show what existing tools can do, and develop better ones. 4-5 year effort.

(Hansen) [The more I look at them, the more] Difficult [it is] for me to feel real concerned about these effects.

(Bergey) [I agree. I think you could] Take [what we knew about this area in [1978, do your] preliminary design, [and just] add factors of safety [instead of spending a lot of time and money on this work.]

(Nelson) How big [does a turbine for this research] have to be? MOD-0 [size]? What's the optimum size for field test?

(Doman) [We know there are] stresses that are thought to be due to the environment. I'm for [this research] to help designers. But our turbine [at Medicine Bow] is impervious to turbulence. There are a lot of reasons, but #1 is: WE KEEP IT OUT OF STALL. You need to be careful to find out what the hell designers really need.

(Stoddard) This is a basic science area, where we can expect to have disagreement. [But you] Have to have basic research -- this is a good [area]. [Some findings] May spin off into instrumentation.

Vote on spending:

Too much: 4 (Thompson, Bergey, Hansen, Gray). About right: 4 (Clark, Nelson, Schienbein, Doman). Too little: 1 (Stoddard).

2. Variable Speed System Research

"Potential for major breakthrough. Performance and structural benefits significant but uncertain." FY 1986 funding $600,000, FY 1987 funding $900,000.

(Stoddard) [I think this is] Too little [funding]. [This is an] extremely important [area]. [There is a good possibility for] A major breakthrough [with] results across the board.

(Schienbein) The costs don't seem good for machines less than 500 kW in size.

(Bergey) Our company decided to go for variable speed, even though induction was easier, [because it] works in the market. [We were] able to beat out quite a few induction machines. Why? Higher production per square meter of rotor area, lower startup [speed].

I'm convinced that variable speed [can be accomplished with] power electronics at low cost. I think the production benefits are clear. Also, if you can get rid of the gearbox, it lowers the O&M costs.

I'd like to see something move in this area, but it can't be within a narrowly focused [size range].

(Clark) [This research effort appears] Geared to utility/windfarm scale machines. There needs to be another for single wind turbines.

(Doman) I think it's a good program. It's not quite as orderly and rapid as it should be. I think the work has been [a little] fragmentary, and [needs more focus].

Vote on spending:

Too much: 0. About right: 5. Too little: 4 (Stoddard, Bergey, Thompson, one other).

3. Cooperative Research

FY 1986 funding $500,000, FY 1987 funding $2.0 million.

(Stoddard) [I think this is an excellent program, particularly] two characteristics: (1) it allows a company on a tight budget to do data gathering and analysis, and (2) [it allows assembling of a] high quality data bank on dynamic stall.

(Sherwin) I'd like a statement on the record for clarification. [AWEA has a] Few members who thought [this program was an] Avenue for peripheral research on the MOD-5B.

(Rogers) No, that's definitely not the case.

(Thompson) This is one of the most important [programs] for the hardware makers -- [it allows them to maintain a research staff].

(Schienbein) I agree, and I'm a strong supporter. Is there room for unsolicited proposals in this program? There's lots of work we could be doing that would fit.

(Rogers) We don't encourage or discourage unsolicited proposals. [But if you sent an] Unsolicited proposal to the CFTP, [you'd] almost have to get a response [to the effect that because of] (1) schedule and (2) structure, [there would] not be enough money [to fund the proposal.]

(Noun) [You] Always want as many avenues as possible [for funding]. I think the labs should have a little [discretionary money for such purposes].

(Stoddard) I like the No Exchange of Funds idea for those types of things.

Vote on spending:

Too much: 0. About right: 8. Too little: 1 (Sherwin).

4. Combined Experiment to Correlate Structural Stress, Wind Inflow, and Air Loads

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"Intensive experiment on intermediate size turbine to characterize wind input, air loads, stress and fatigue." FY 1986 funding $0, FY 1987 funding $500,000.

(Doman) Why is this being done on an intermediate-scale machine?

(Butterfield) [Because much easier to work with machine of that scale and much more cost-effective, and we have a suitable test bed on hand. Also easier to do instrumentation on unarticulated hub -- we may go to a teetered rotor later on.]

(Doman) I think it's a commendable idea.

(Hansen) [I would] Add my support, with one addition. In the area of inflow, I hope you will look at yawed flow. That's been an area of major problems in the field.

(Bergey) [I think it's] Great, can't wait to see what comes out. But it's only downwind -- [do you] see the tower effects as being tough to separate?

(Butterfield) We don't know yet, but we can take the instrumentation further away from the tower if we need to.

(Stoddard) [This is] Crucial, recommended by the Aerodynamics Research Panel. [And another benefit is that] It gets SERI and Sandia working together.

It's a very ambitious test plan, though, and it will be important for everyone to make sure that the test plan is prioritized.

(Nelson) It seems like we need a HAWT test bed in the 10-20 meter range...maybe this is it.

Vote on spending:

Too much: 0. About right: 5. Too little: 4 (Stoddard, Doman, Hansen, one other).

5. Update/validate Aerodynamics Codes

"Incorporate turbulence, delayed stall, and other improvements." FY 1986 funding $250,000, FY 1987 funding $300,000.

(Doman) Am I correct that Sandia attempts to go through structural response whereas SERI stops short?

[Unidentified] SERI does Aerodynamics, while Sandia does both Structural Dynamics and Aerodynamics.

Vote on spending:

Too much: 0. About right: 8. Too little: 1 (Zuteck).

6. Fatigue Prediction and Method Comparison Initiative

"Can't yet predict lifetime acceptably. Monitor crack growth." FY 1986 funding $500,000, FY 1987 funding $700,000.

(Doman) Does this include loads?

(Schienbein) We use the LIFE code, does this upgrade it?

(Sutherland) The LIFE code is specific for VAWTs, not for HAWTs. We intend to add to it.

(Schienbein) [Do you] intend to move toward support for industry in determining maintenance [needs]? All cracks grow, but the big question is how [companies] should devote their resources to repair and retrofit. [How do we] know which cracks are critical?

(Stoddard) I think we will benefit from the understanding of composites [this work will give us, more] than from the metals research for VAWTS. The aerodynamics-based codes are not even in the ball park for us.

(Zuteck) What's going to get done and what not? To what extent are composites being covered?

(Bergey) I have two comments: (1) Some companies have done accelerated fatigue tests to find out the likelihood of fatigue life without great success, and work is needed on accelerated testing methods as well as materials; (2) [I think it would be] more valuable to take a windfarm turbine and look at its operating history.

(Doman) I'd cut the hell out of this element for the following reason: there's not enough loads determination involved in it.

(Schienbein) Another big question is how to use cyclic loading and accommodate turbulence.

Vote on spending:

> Too much: 6 (Thompson, Doman, Bergey, Zuteck, Nelson, Stoddard). About right: 3 (Clark, Schienbein, Hansen). Too little: 0.

7. Refinement of Stochastic Wind Turbulence Models

"Turbulence is key loads driver. Need to determine key parameters." FY 1986 funding $680,000, FY 1987 funding $300,000.

8. Aerometeorology Methods to correlate Turbulence and Structural Loads

"Develop methods to relate air turbulence and airfoil surface pressures and resulting structural loads." FY 1986 funding $0, FY 1987 funding $200,000.

9. Innovative Techniques to Characterize Turbulence

"Do not know time-varying wind input to turbine rotor well. Need flexible techniques." FY 1986 funding $0, FY 1987 funding $100,000.

[Items 7-8-9 taken as a group]

(Stoddard) Again, [these items were a] high priority of the Aerodynamics Research Panel. The key word [they used] is "aerometeorology," meaning a need for close communication between meteorologists and wind engineers. I think this is a small amount of money compared to the potential gain.

> (Wendell) There's been pretty good communication with the mainstream turbulence guys.

(Doman) I've got to go on record: this information about the turbulence input spectrum is not useful information. Jim Connell has been fascinated with it, I felt not useful. It's useless to the designer. And the results from a rotating boom are misleading, because the boom is not infinitely stiff. A rotating array is OK, a boom is suspect. Flexibility in the blade wipes this out. A teeter wipes it out, too.

(Bergey) What's the sense of where this is leading and when it will lower the cost of energy? What will it save in wind turbine manufacturing costs, and when?

(Hansen) I support what PNL's been doing.

Vote on spending:

Too much: 2 (Clark, Nelson). About right: 7. Too little: 0.

10. Structural Loads Phasing Research

"Key uncertainty in loads model is coherence of harmonic loads." FY 1986 funding $865,000, FY 1987 funding $800,000.

(Thresher) I'd lump this in with fatigue prediction. They're kind of muddled together. This covers loads work in the Westinghouse, Howden, and Northern Power projects.

(Hansen) Does it include work on the FLAP code?

(Thresher) Yes.

(Dodd) Sandia is also working on VAWT codes. Time domain and frequency domain analyses, and prediction of stress states. It also covers the 34-meter experiment with PNL.

(Bergey) What's the payoff? When do you expect to lower the cost of turbines?

(Schienbein) I think this is a critical area, not so much because of the possible saving of material. Our experience with the 500-kW Darrieus turbine shows that there are several microsites [in one windfarm on Cameron Ridge]. [There are] Large parts of the available wind topography that will be closed out if we don't understand turbine fatigue.

(Thompson) For our property, I think one thing that might need to be done is to look at the interaction of terrain and wind effects. We don't know how to separate them.

Vote on spending:

Too much: 2 (Clark, Bergey). About right: 6 (Stoddard, Thompson, Zuteck, Doman, McGowan, Schienbein). Too little: 1 (Hansen).

11. Generic Airfoil Development

"Improved airfoils to take advantage of dynamic stall." FY 1986 funding $431,000, FY 1987 funding $600,000.

(Zuteck) [I think this is a very important element. In particular, we need blades that] (1) have better roughness tolerance (bugs, sand, etc.) and need less repainting and cleaning, and (2) less gust sensitivity.

[We] Want to lower costs and have longer [blade] life. These are all served simultaneously [by this work].

What we're seeing [is that] airfoils appear to be getting there [with respect to] roughness tolerance [and with the] power curve still tuned to maximum energy capture.

I think this is one of the most significant items on the list. Ten years from now, most of the serious design work will exploit this stuff.

(Bergey) Is there any possibility of looking at blades for variable-speed designs and those of us who like constant-section [airfoils]?

(Tangler) Yes, we hope to look at that.

(Stoddard) I favor, should increase [funding].

Vote on spending:

Too much: 0. About right: 6. Too little: 3 (Bergey, Stoddard, Zuteck).

12. Wind/Diesel

"Conduct hybrid wind/diesel studies." FY 1986 funding $250,000, FY 1987 funding $300,000.

(Noun) The U.S. is a member of Annex 8, the International Energy Agency (IEA) wind/diesel group. There's been a lot of discussion of this area, and [a feeling that there is a] huge market.

(Clark) What's critical problem?

(Noun) [Finding out the best configuration.] Is it a wind system, a diesel system, and a battery? A flywheel? Or some other option?

(Hansen) Is SERI the only lab [involved with this]? [How much of the work is outside SERI vs. in-house?]

(Noun) Yes, it's the only lab, and the work is about one-third internal, two-thirds out-of-house.

(Unidentified) [The money allocated for the University of Massachusetts] is here and in the University Research category.

(Schienbein) We aimed at a specific market -- one using small systems [and aimed at] communications and remote sites. I felt [the problem was] all controls and electronics. There didn't seem to be heavy research needs.

(Bergey) I don't think you can keep [this confined] to just wind/diesel systems very long [without looking at other types of hybrids as well.]

(Noun) We do plan to look at controls issues.

Vote on spending:

Too much: 3 (Clark, Nelson, Schienbein). About right: 3 (Stoddard, Hansen, Doman). Too little: 3 (McGowan, Gray, Bergey).

13. Flow and Performance Variability Research

"Complex terrain significantly alters wind flow. Validate models with wind tunnel and field data." FY 1986 funding $200,000, FY 1987 funding $200,000.

(Wendell) This area involves looking at terrain effects on energy capture. It does not include turbulence forecasting.

Goodnoe Hills has equipment [that] looks [as if it] could be used for windfarms.

[We're] also hoping for a No Exchange of Funds agreement in this area.

(Clark) Is '87 the last year for this?

(Unidentified) No, probably we will go into turbulence in the out-years, with about the same level of funding.

(Unidentified) How is this item different from #16 -- Wakes and Micrositing Research?

(Unidentified) 16 is wake research (in the field, with benign terrain). [Includes CFTP] activity at Fayette. [Aimed at] getting a handle on wake dynamics.

The Small Business Innovative Research (SBIR) program has funded two contracts to study combined wake and flow effects. Complex problems.

(Stoddard) How close [are you to having] a complex terrain model...a mass-consistent model?

(Unidentified) [About] a year -- two years to [having a model for use on a] PC.

Vote on spending:

Too much: 4 (Doman, Clark, Nelson, Bergey). About right: 4 (Hansen, McGowan, Schienbein, Thompson). Too little: 1 (Stoddard).

14. Upgrade Data Equipment (Capital Equipment)

"Computer, data acquisition, and met equipment." FY 1986 funding $800,000, FY 1987 funding $170,000.

[No discussion or vote on this item.]

15. Aeroacoustic and Environmental Research

"Complete windfarm noise model validation." FY 1986 funding $250,000, FY 1987 funding $250,000.

(Unidentified) Most [of these funds are] for NASA-Langley noise studies. The rest is for a publication on low-frequency wind turbine noise.

[Discussion whether a vote against this work is meant to indicate that efforts to arrive at a standard method of measuring noise in cooperation with Riverside County representatives are of little value.]

(Gray) I intend to interpret this vote as aimed specifically at what has been described here, rather than as meaning that noise concerns and acoustic measurement standards are unimportant. Any objectors to this interpretation can take the question up with me later.

Vote on spending:

Too much: 6 (Clark, Nelson, Bergey, Doman, Hansen, Stoddard). About right: 3 (Zuteck, Thompson, McGowan). Too little: 0.

16. Wakes and Micrositing Research

"Complete validation/improvements to wake models for complex terrain." FY 1986 funding $250,000, FY 1987 funding $250,000.

(Stoddard) Is the long-term goal here characterization of turbine wakes?

(Wendell) (1) Wakes; (2) in complex terrain. [But primarily] Wake characterization.

(Stoddard) I see parts of the problem [being addressed], but not a focused goal. [I think what is needed is] an array model usable by windfarm developers. I'd rather see more work in turbulence and inflow as opposed to wake stuff that's design-specific.

(Thompson) Where we are is not just at the beginning. We're not too far from having reasonable codes [along with] the backup information to make reasonable guesses [about what's going on].

(Hansen) There are some real problems out there that need to be addressed. Based solely on [the potential increase in energy output], this is worth it.

(Schienbein) [Economics considerations dictate that] Packing [of machines] will take place, some disastrous. I have a lot of confidence in [this] program.

Vote on spending:

Too much: 4. About right: 4. Too little: 0.

17. Planning and Assessments

"State of technology, R&D needs, miscellaneous support." FY 1986 funding $500,000, FY 1987 funding $700,000.

(Doman, Stoddard) Should be an effort to evaluate the state of the art and identify design trends.

(Schienbein) I'm not so sure. [The value of a study like that] depends [heavily] on who's doing it and how they go about it.

(Clark) I think what we really need is documentation of test results.

(Hansen) I think a technical assessment would be valuable to me personally, and that there are trends that come clearly from the data [that has been assembled].

[No vote taken on this item].

18. Materials Research

"Investigate properties of steel, wood/epoxy, aluminum." FY 1986 funding $0, FY 1987 funding $200,000.

> (Thresher) I think this program came out of one of the other review meetings. [The idea is to] find out what's around [in available information on various material properties from other disciplines.]

(Clark) How long an effort is planned? One year? Two? Five?

> (Thresher) Just a one-year literature survey.

(Bergey) [I think it's a good idea. I'd like to know, for example,] why people keep using aluminum for blades -- vertical or horizontal? I don't know of a single success story [with that material in that application].

Vote on spending:

> Too much: 0. About right: 6 (Nelson, Stoddard, Clark, Hansen, McGowan, Schienbein). Too little: 2 (Bergey, Thompson).

19. Experimental Mapping of Unsteady Rotor Induction Effects

"Performance models assume steady wind flow through rotor. Unsteady and turbulent influences are unknown." FY 1986 funding $0, FY 1987 funding $100,000.

[No discussion on this item, which was felt to have been covered in previous discussions.]

Vote on spending:

> Too much: 1. About right: 6. Too little: 0.

20. Windfarm Power Quality and Array Response

"Rate of power change from farm, harmonics, voltage." FY 1986 funding $110,000, FY 1987 funding $100,000.

> (Unidentified) This is really a small-scale program, following the work that EPRI and the utilities have been doing in looking at power quality issues.

(Clark) Is it limited to windfarms? I'd like to see some attention given to small grids and substations [with high penetrations of wind power]. We've had some big problems with the rural electric cooperatives because of power quality -- [I think there needs to be a] collection of basic data [on the subject].

(Thresher) I think [EPRI's been] trying to do some of that work in Hawaii.

(Clark) Well, we're monitoring one situation where the wind systems are 11 miles from the substation and there's a 60% penetration. The utility defines lines as "soft" and "hard" and most windfarms [are on hard lines -- they] go through substations. Most other wind turbines are on soft lines.

(Schienbein) I agree with Nolan. Southern California Edison has had some problems in Tehachapi, [largely because] they didn't have enough capacity in the first place.

Vote on spending:

Too much: 0. About right: 4. Too little: 3 (Thompson, Bergey, Clark).

21. Technology Transfer and Code Simplification

"Simpler, but useful codes, Wind Workshops and meetings." FY 1986 funding $400,000, FY 1987 funding $200,000.

[No discussion on this item.]

Vote on spending:

Too much: 1 (Clark). About right: 6. Too little: 1 (Bergey).

22a. Voluntary Standards Support

"Technical assistance in developing standards." FY 1986 funding $175,000, FY 1987 funding $200,000.

(Nelson) I remember sitting in Boulder in 1979 talking about standards. I think pretty soon we ought to be able to come to some kind of a consensus, and get a standard finished.

Vote on spending:

Too much: 1 (Nelson). About right: 5. Too little: 0.

22b. Systems Analysis and Tradeoff Studies

"Engineering models for tradeoffs and system studies." FY 1986 funding $275,000, FY 1987 funding $150,000.

Vote on spending:

Too much: 0. About right: 1 (Schienbein). Too little: 7 (Hansen, Bergey, Doman, Clark, 3 others).

23. Improved Methods of Turbine Control

"Control system integration, tip brakes, pumped spoiling, ailerons, etc." FY 1986 funding $0, FY 1987 funding $0.

(Cadogan) [This item is heavily oriented toward applied science and involves] control systems [development] and other things [that do not fit within the Administration's funding philosophy. It's included here because it is one of the areas identified for work in the Five Year Plan.]

(Schienbein) I think these items should be looked at in the systems tradeoffs effort.

(Zuteck) The aerodynamic brake area seems to be one of the few where we're still just mucking around. The fundamental research on aerodynamic brakes has never been done. And that impacts the type of material [that can be used] for rotors.

[No vote taken on this element.]

University Research

FY 1986 funding $200,000, FY 1987 funding $1.0 million.

(Unidentified) This is work directed out of SERI.

(Doman) Any new items here? Expanded [areas]?

(Thresher) SERI's work focused on aerodynamics. Yaw dynamics work at Utah. The Historic Black Colleges are working on fatigue.

(Nelson) Is this handled by RFP's?

(Thresher) Yes. Send us a proposal that goes toward the goals of the Five Year Plan. Last year we received about 30, and funded three.

Vote on spending:

Too much: 0. About right: 6. Too little: 0.

MOD-5B

FY 1986 funding $12.0 million, FY 1987 funding $4.5 million.

(Gray) Let me introduce this item by saying that I would prefer that we not vote on the funding. Since Boeing has demonstrated an ability to obtain funds for it regardless of AWEA's position, I would rather negotiate with them to find an accommodation which both they and we can support and which involves a complete and balanced research program. I do, however, want Committee members to have a chance to make any comments they would like to on the MOD-5.

(Rogers) $4.5 million will not be enough to finish the machine and the testing, not because of Boeing, but because of the federal deferral activity.

(Doman) I concur that the machine ought to be finished and run. But I feel that more ought to be done in the research than is implied. Once the machine is finished, it becomes a national asset, and ought to be used in the research program.

I feel we've had a lot of value out of the WTS-4. [By contrast,] the WTS-3 [in Sweden] has been run a lot, [and there's not much research information from it.] I think the MOD-2's could have been used better.

> (Spera) $4.5 million should be enough to finish the machine, if nothing happens. But it won't include money for testing. About $2 million will be needed for that.

(Clark) If my numbers are correct, $4.5 million is about 26% of [the total wind research budget] of $15.75 million.

(Hansen) $2 million is the same amount of money as is planned for the CFTP this year. [I think the CFTP will give us a] hell of a lot more bang for the buck.

(Bergey) Yes, we are dealing with two important assets here. One is the new Boeing machine, and the other is a very limited research budget.

(Schienbein) I'm not very familiar with the pressing research needs in this area -- it would seem better to just turn it on and run it.

[No vote taken on this element.]

Other, General Comments

(Bergey) I feel that lightning remains a serious research problem -- direct-strike induced surges on turbines, power conditioning units, etc. -- a bigger problem than you might think.

(Doman) I think a pretty good job has been done of discussing the distribution of funds in [FY 1987, but I'm] skeptical that the same division should apply in [FY 1988].

(Bergey) I have some of the earlier program reviews, and looking at them and at this, it's clear that there's a lot more bang for the buck here. [Things are going in a] good direction.

STATEMENT OF THE FLORIDA SOLAR ENERGY CENTER

Dear Chairman Johnston:

I want to thank you and the Energy and Water Development Subcommittee for the opportunity to provide these remarks for the record on DOE's renewable energy program. As you are aware, the Senate has provided funding during the past several years for research topics of interest to the State of Florida. These topics include buildings, hydrogen and photovoltaics. The Florida Solar Energy Center has conducted extensive research on these topics in cooperation with federal agencies and with private companies. Through my experience as an active participant in each of these programs, I submit the following observations and recommendations:

1. Solar Buildings Research Program - A major part of the federal solar buildings program is a Congressionally initiated long-term effort into a new area of building research, which is aimed at solution of the cooling and dehumidification problems encountered in new residential and commercial buildings. The goal of this five-year cooling and dehumidification project is to conduct research on and to develop technologies that will save 50 to 75 percent of the energy needed to cool buildings.

   This buildings research program has already provided new information that is of value in excess of the research costs. For example, recent Congressional testimony before the House Space, Science and Technology Committee by Oak Ridge National Laboratory cited radiant barrier technology as being capable of saving 0.17 quads of energy in the South alone. The Florida Solar Energy Center conducted pioneering research in this emerging building technology over the past five years, supported primarily by state funds.

   The present project conducted by the Florida Solar Energy Center has a strong base of private industry support; nearly 50 percent of its 1987 funds has been provided by industry. To maintain this industrial support, DOE support must continue. Thus, we strongly recommend that Congress continue funding of this research project by providing $1.5 million in the FY 1988 budget and to earmark these monies for this vital new government-industry partnership. We further recommend that Congress increase the overall DOE solar buildings program budget for FY 1988 to a level approaching that of FY 1986 in order that component solar building research can continue in a supportive and coordinated manner.

2. Hydrogen Production and Utilization Research Program- Hydrogen may well be the best energy option for sustaining and supporting human society. Currently, our major use of hydrogen as a fuel is for the Space Shuttle. Very soon it will be needed for stationary applications on board the Space Station. Development of transatmospheric vehicles could easily double or triple its demand. DOD and NASA plan to spend $3 billion over the next seven years to design and construct such vehicles, and their program managers are counting on the Department of Energy to develop cost-effective hydrogen fuels.

There are additional reasons for supporting hydrogen research now -- the greenhouse effect, acid rain, the need for alternatives to gasoline and jet fuel and our national security to name just a few. Development of renewable or solar-produced hydrogen fuel appears today to be our best long-term option. At this juncture, we need to determine the best hydrogen production technology and the time frame for its implementation.

To this end, Congress recognized the need for the hydrogen from renewable energy program when it provided initial funding in FY 1985. With those funds, DOE directed Florida and Hawaii to assess the status of hydrogen technology and to determine priority research areas.

In 1986, Congress again recognized the need and urgency for upgrading the national hydrogen program when it introduced bills on the topic in both houses (S. 1685 and H.R. 3899), and provided further funding in FY 1987 of $1.2 million to continue research on hydrogen from renewable resources.

It is imperative that the work on the prioritized research issues be continued; thus, we recommend that Congress continue, at level funding, the hydrogen from renewables program for FY 1988 at $1.2 million. These funds should be specifically designated within the DOE renewable energy budget.

3. Photovoltaics Research Program - Photovoltaics is the most promising of the solar technologies. Every individual familiar with the technology predicts enormous future success for its use. Our involvement in photovoltaics technology has grown through five years of operating the photovoltaic Southeast Regional Experiment Station (SE RES).

   This $6 million research program has resulted in solution of many utility interface problems and in the increased application of photovoltaics. There is a continued need for the SE RES and its work with Sandia National Laboratories in a variety of important areas. One of the major areas needing attention in FY 1988 is the testing and evaluation of new single-junction and tandem thin-film modules to determine their reliability, stability and power production in system operation. This national program is a resource that must be continued. As such, it is requested that $600,000 ($300,000 each) be provided to operate the Southeast and Southwest RESs.

   Japan, Germany and Italy now have larger government-funded photovoltaics R&D programs than does the U.S. Photovoltaics is a technology that must not -- as many have -- be abandoned to foreign competition. Therefore, we also recommend that at least level funding be continued for the entire photovoltaics program.

Your consideration of these valuable solar programs in the Senate appropriations process is recommended and will be appreciated.

STATEMENT OF THE BIOMASS ENERGY RESEARCH ASSOCIATION

This testimony pertains to the Department of Energy R&D appropriations. The Biomass Energy Research Association (BERA) recommends that $32.1 million be provided for Biofuels R&D, with the funds allocated in the following fashion:

Biomass Production Research	$ 7,200,000
Thermochemical Conversion Research	
Biomass	5,100,000
Municipal Solid Waste	5,100,000
Biochemical Conversion Research	6,700,000
Regional Programs	6,000,000
Novel Concepts	2,000,000
	$32,100,000

Thank you Mr. Chairman and members of the Subcommittee.

My name is Donald L. Klass. I am President of BERA. BERA is a non-profit association that was founded in 1982 by biofuels researchers. Our objectives are to promote education and research on renewable biomass- and waste-to-energy systems that can be economically utilized by the public, and to serve as a source of information on policies and programs for our members and industry.

We appreciate the opportunity to present BERA's recommendations for the federal biofuels and municipal waste R&D budget each year and commend the Subcommittee for its continued support and recognition of the important role that energy from biomass and wastes has in the U.S. energy economy. We also applaud the biofuels program managers in the Department of Energy for being able to continue a balanced R&D program of the integrated biomass, municipal solid waste, and alcohol fuels components.

It is doubtful that the real growth potential of energy from biomass and wastes and their unique capability of supplying liquid, gaseous, and solid fuels to all four sectors of the U.S. energy economy — the residential, commercial, industrial, and transportation sectors — will ever be realized if the Administration's R&D budgetary request on biofuels of $10,655,000 for fiscal 1988 is sustained. This corresponds to a 56% reduction in support from the fiscal 1987 budget. It would destroy the continuity of biofuels research in DOE, make it impossible to sustain a balanced R&D effort, and inevitably result in a crash research program when we are in the midst of the next oil crisis. I am certain that the resulting deterioration in the value of this kind of research to the Nation's energy consumers and the adverse impact on our international competitiveness would severely impair our ability to develop, utilize, and also export our own renewable energy technologies for many years. We believe that a minimum federal budget for biofuels and municipal waste R&D of $32.1 million should be provided in fiscal 1988.

There are many arguments that can be presented in favor of increased federal support of biofuels R&D. I would like to offer a few of the more important ones for your consideration before the details of BERA's recommendations are presented.

- Biofuels are the only renewable resource capable of supplying substitutes for fossil-derived liquid, gaseous, and solid fuels, as well as electricity, to all areas of the Nation from local resources.
- Biofuels presently contribute about 3% to the Nation's primary energy demand — wood fuels at 1.2 million BOE/d, octane-enhancing alcohol fuel liquids at 32,000 BOE/d, electric power from municipal solid waste combustion plants at 8,200 BOE/d, and substitute natural gas from solid waste landfills at 2,400 BOE/d.
- At a price of $18 per barrel of oil equivalent, biofuels currently retain in the U.S.A. about $8.2 billion per year that are not expended on oil imports thereby having a very positive impact on our massive trade deficit.

- The potential contribution of biofuels to the Nation's primary energy demand is conservatively estimated to be 8.0 million BOE/d, or about 20% of total current energy consumption.
- Biofuels provide excellent regional benefits — 80 cents of every dollar spent on biofuels in a given region stays in that region, while 80 cents of every dollar spent on petroleum leaves the region.
- Utilization of biofuels supplies local jobs and income such as, for example, the 78,000 jobs and $1.9 billion in income in the Northeast that resulted from fuel wood usage in 1985, both of which have been projected to double by the year 2000.
- Virtually all basic organic chemicals can be manufactured from biomass and wastes thereby displacing fossil feedstocks.
- Biofuels are one of the most environmentally benign energy options and contribute nothing to acid rain.
- The widely dispersed nature of biomass and wastes and their use as energy resources greatly improve our national security.

It is clear that biofuels can make a large contribution to the Nation's energy supply. But in order to achieve the full potential of biofuels, it is essential that the technological barriers to commercial use be overcome and that reliable economic systems be developed for both the private and industrial sectors.

With relatively small amounts of federal support, DOE has taken the lead role in achieving these goals by funding basic and high-risk R&D not performed by industry. Examples of long-term, high pay-off R&D areas where significant technical problems remain but whose solutions can lead to substantial advances in biofuels usage include the conversion of low-value lignocellulosic materials such as forest and agricultural residues to low-cost liquid fuels, the production of medium-Btu gas, and the development of woody biomass production methods that provide high yields at short growth periods. The transfer of innovative biomass energy technologies from this program to the private sector in all regions of the country will ensure steady growth in the contribution of energy from biomass and wastes to U.S. primary energy demand.

A sustained and targeted DOE biofuels program not plagued with large fluctuations in annual budgets will help this happen and provide the technology that we need when and where we need it.

BERA RECOMMENDATIONS

The members of BERA have been polled for their views on the fiscal 1988 biofuels budget; the BERA directors have reviewed the results of this survey; and the following recommendations represent our collective wisdom on the funding levels and R&D areas we urge you to include in next year's budget. About one half of our budgetary recommendation is devoted to conversion, because as pointed out last year, we believe that answering fundamental questions about how various biomass and wastes can be processed and efficiently converted to energy and fuels is the keystone to a sound program to develop advanced biofuels systems. Note also that the industry-cofunded medium-Btu gasification demonstration that BERA has supported for several years is not mentioned. The funds have already been appropriated for this scale-up program and will therefore not affect the R&D budget for fiscal 1988.

Now, I would like to highlight BERA's biofuels recommendations for fiscal 1988.

Biomass Production

The production of low-cost woody, herbaceous, and aquatic biomass, and the recovery of selected residues for energy applications offer unique ways of supplying energy to all areas of the Nation by utilizing local resources. Research on short-rotation intensive culture of trees has progressed to the point where valuable information on species selection, growth and harvesting methods, and costs are evolving. Field tests with selected herbaceous species are about to be started in several areas of the country, and research on the production of aquatic species of biomass has provided several leads for the direct manufacture of liquid fuels. Some species have already shown promise for the low-cost treatment of municipal sewage or eutrophic waters and the concurrent production of energy. Scale-up production programs for several biomass species are now appropriate.

BERA recommends that $7,200,000 be directed to continue biomass production research.

Thermochemical Conversion Research

Laboratory- and PDU-scale research on the thermochemical conversion of biomass and municipal solid wastes has established the technical feasibility of several advanced combustion, gasification, and liquefaction processes. A considerable portion of this work is in the mid-stage of development and should be completed so that sufficient data are available to project real costs in large-scale systems. Basic research is also in progress to improve our understanding of the mechanisms of conversion and the production of pollutants, particularly from the combustion of municipal solid waste, the disposal of which is a major problem for the entire Nation. The research results emanating from this effort are expected to facilitate the development of more efficient disposal-energy recovery processes.

Although progress has been made in gasification research to optimize reactor designs and operating conditions to maximize yields and desired products, research is still needed to perfect the feeding of diverse biomass and waste feedstocks at elevated pressures, the elimination of tars and particulates from product gas streams, the recycling of residues, and the correlation of feedstock characteristics with conversion conditions and product yields.

In the case of direct thermochemical liquefaction, high- and low-pressure processes have been investigated for biomass and wastes, and techniques for upgrading pyrolysis oils have been identified. But more work remains to be done on the characterization and storage properties of the oils produced at different conditions and to explore the possibilities for producing gasoline, diesel fuel, and oxygenated organic chemicals directly from the oils. Thermochemical liquefaction methods for the production of fuel ethanol also show promise and merit investigation. Indirect liquefaction methods via intermediates such as synthesis gas for production of liquids identical to those in petroleum-based fuels have been researched and are ready for scale-up to pilot operations.

Cofunding by industry, especially of some of the large-scale projects, is supported by BERA, but should not detract from maintaining a vigorous thermochemical program component. BERA's members who are conducting thermochemical conversion research are concerned with the large reduction in research funding that this program component has already experienced. Also, BERA's members feel that biomass and municipal solid waste research should be funded equally. Municipal solid waste disposal is an immediate problem that needs our attention, while thermochemical conversion of biomass offers a mid- to long-term approach to the development of large-scale biofuels systems.

BERA recommends that $10,200,000 be directed to continue thermochemical conversion research and be equally divided between biomass conversion and municipal solid waste conversion.

Biochemical Conversion

Biochemical conversion research on biomass and wastes has made good progress in the laboratory toward the development of economic processes for the fermentation of low-cost lignocellulosics to fuel ethanol. This research area presents many difficult problems that are still unsolved. The federal biofuels program on biochemical conversion should continue to focus on these problems so that ultimately, practical fuel ethanol processes based on non-edible biomass and wastes are available. Integrated feedstock supply, fuel ethanol production, and by-product utilization systems are also needed for both small- and large-scale operations. Progress has been made on these subjects including the conversion of hemicelluloses and lignins, and research is reaching the point where laboratory results can be consolidated to provide meaningful processes.

Research on methane from anaerobic digestion of municipal solid waste has been performed at the pilot plant scale and significant progress has been achieved. But this work has uncovered several difficulties that must be addressed in additional research to fully develop this technology as a waste disposal process and a reliable source of substitute natural gas. Multiple biomass-waste feedstock mixtures, advanced anaerobic digestion designs, and integrated wastewater treatment, biomass production, and anaerobic digestion systems also need further research to improve conversion efficiencies, methane yields, and gas production rates.

BERA recommends that $6,700,000 be directed to continue biochemical conversion research.

Regional Programs

Because of the dispersed nature of biomass, its great diversity, and the preference of different biomass species for certain geographic regions, the transition from research to commercialization is a slow and site-specific process. The formation of the Regional Programs in 1983 by Congress has been instrumental in speeding up the transfer of technology from the laboratory to the commercial sectors. The role of the Regional Programs is essential because they are basically the last link in the entire chain and correspond to the marketing arm of the research effort. It is therefore most unfortunate that the activities of the Regional Programs are zeroed-out of the Administration's fiscal 1988 budget. The BERA members feel strongly that there is a continuing need for the Regional Programs now more than ever; they should not be terminated. Indeed, expansion is in order.

BERA urges that $6,000,000 be directed to continue the Regional Programs.

Novel Concepts

A new research category "Novel Concepts" on energy from biomass and wastes is recommended for inclusion in the fiscal 1988 biofuels program. This program component should be performed under a competitive funding mechanism via solicited and unsolicited proposals. It should be open to all researchers who believe that their concept is truly unique and can make a large contribution to the direction of research or the development of innovative technologies. The biofuels program needs to nurture development of entirely new biomass production and conversion processes for the Twenty-First Century.

BERA recommends that $2,000,000 be directed to initiate research on Novel Concepts.

Recommended Budget

Since the consolidation of the three areas that now make up the biofuels research program — biomass, alcohol fuels, and municipal solid waste — the Administration's budget request for this program has been substantially less in a given fiscal year than the actual expenditures for the previous fiscal year. This has made it quite difficult to maintain the original objectives of the separate programs, but DOE's program managers have attempted to do so within the constraints of a steadily reduced budget. BERA strongly recommends that Congress remedy this situation by appropriating a budget of $32.1 million for fiscal 1988.

Program Evaluation

Last year, BERA recommended the formulation of a multi-year plan to help focus biofuels research. We are pleased to note that the Biofuels and Municipal Waste Technology Division of DOE has initiated this activity. We feel that development of this plan is extremely important because of the complexity and inter-disciplinary nature of biofuels research, and urge that the plan be sufficiently detailed to allow its critical review and updating on an annual basis.

In conclusion, I would like to point out that in March, the House Subcommittee on Energy Research and Development of the Committee on Science, Space, and Technology reported an authorization budget of $15.6 million for biofuels R&D for fiscal 1988. The members of BERA feel strongly that this level of funding is completely inadequate, and would be a serious mistake. Both the Secretary of Energy and tne Secretary of the Interior have recently warned of additional energy shortages in the relatively near future. Since an effective U.S. response to any future energy crisis will require utilization of several energy resources, including biofuels, now is not the time for us to dramatically reduce our R&D investment in this crucial domestic source of liquid, gaseous, and solid fossil fuel substitutes.

STATEMENT OF KMS FUSION, INC.

Summary

The 1988 Administration budget proposal requests $112.5 Million in operating funds for the ICF program, a 25% reduction from the 1987 level of $142.7 Million. This proposed reduction comes at a time when the major facilities in the ICF program are reaching a high level of productivity, and progress in the program is already limited by lack of funding. We urge that operating funds in the program be raised to a level more consistent with program requirements, and more in line with the Happer Committee recommendation of $167 Million. We further request that operating funds for KMS Fusion be appropriated at a level of $14.3 Million, to enable us to provide adequate technical support to the ICF program.

The Inertial Confinement Fusion Program

Fusion is the process which generates the sun's radiant energy, and which give the hydrogen bomb its awesome power. In fusion, the fuel, consisting of the heavy isotopes of hydrogen (deuterium and tritium), is heated to a temperature of 100 million degrees, hotter than the sun's interior. At this temperature, the hydrogen nuclei fuse together to form helium, with an attendant release of energy. The fuel must be confined, i.e., held together long enough so that the energy released exceeds the energy invested to heat the fuel to the reaction temperature.

Inertial Confinement Fusion is one approach to confining and heating fusion fuel. Energy from a powerful laser or particle beam is concentrated on a spherical shell containing the fuel. The fuel is heated and compressed in the process, until thermonuclear conditions are achieved at the center, igniting the fusion reaction. The surrounding compressed fuel is then ignited by a propagating thermonuclear burn wave, releasing energy form the fusion reaction.

Inertial Confinement Fusion research has been supported by the Congress for over a decade, with two objectives. In the near term, the ICF program provides information about thermonuclear physics which is of vital importance to the nuclear weapons program. In the long term, ICF is viewed as an alternative path to harnessing fusion as a source of energy. In the Department of Energy (DOE), the ICF program is administered by the Office of Inertial Fusion, under the overall direction of the Assistant Secretary for Defense Programs.

The hydrogen bomb demonstrates that ICF is feasible on a large scale. The objective of the ICF program is to demonstrate that thermonuclear ignition can be achieved on a laboratory scale, driven by a laser or particle beam. At present, the two premier facilities available to the ICF program are Nova, a 10-beam, neodymium-glass laser at the Lawrence Livermore National Laboratory (LLNL), and PBFA-II, a light-ion beam facility located at the Sandia National Laboratories in Albuquerque. Both systems became operational in 1985. Four other laboratories are active in the ICF program. These are the Los Alamos National Laboratory (LANL), KMS Fusion, the University of Rochester Laboratory for Laser Energetics (UR/LLE), and the Naval Research Laboratory (NRL).

The Nova Project

In 1979, the DOE approved the construction of the Nova laser at LLNL. Nova was originally conceived as a 20-beam, neodymium-glass laser, capable of generating 200 to 300 kilojoules of infrared light in three-billionths of a second (3 nanoseconds). However, DOE only approved construction of a ten-beam system, designed to produce 100 kilojoules of infrared light, but with frequency conversion capability, to convert the output to visible light. The total project cost for Nova is approximately $180 Million. Nova can operate with either two beams or ten, and is equipped with two experimental target chambers.

There are two basic approaches to driving an inertial fusion target. The laser light can impinge directly on the target (direct drive), or can be converted to x-rays in an enclosure ("hohlraum") containing the fuel mass, and the x-rays used to drive the target (radiation drive). Radiation-driven targets offer better uniformity of illumination than direct-drive targets, but sacrifice efficiency at lower laser energies. Both approaches are currently under investigation in the ICF program. Nova experiments emphasize the radiation-driven approach, which also provides important information on the physics of nuclear weapons.

The Nova laser is currently used, not only for ICF experiments but also for experiments related to nuclear weapons physics, and the development of x-ray lasers. The immediate goal of Nova ICF experiments is to demonstrate high density (500 to 1000 times liquid D-T density) at sub-ignition temperatures. Data from these experiments, along with information from other sources, will define the driver and target requirements for both ignition and high-gain targets.

KMS Fusion's Contributions to the ICF Program

KMS Fusion is located in Ann Arbor, Michigan, and is the only private participant in the ICF program. The Company has played a major role in the development of inertial confinement fusion. Fusion research at KMS Fusion began in 1971. In 1974, the world's first successful demonstration of laser-produced thermonuclear reactions took place at KMS Fusion's laboratory. Since then, the Company has contributed many other innovative "firsts" to the program. KMS Fusion was the first to carry out experiments with short wavelength light, a technique which has been subsequently adopted worldwide. The Company pioneered the use of frozen (cryogenic) fuel in ICF targets, a complex technique generally acknowledged to lead to improved target performance. In 1981, KMS Fusion scientists demonstrated that cryogenic targets perform better than room-temperature, gas-filled targets. In 1986, experiments at KMS Fusion combined the use of cryogenic plastic fuel shells with precise control of the laser pulse's temporal shape, to further improve target performance.

KMS Fusion has contributed greatly to the development of sophisticated diagnostic instrumentation for fusion experiments. In 1983, the Company developed a multi-frame holographic interferometer for visualizing the evolution of material surrounding the surface of a target. This instrument is capable of providing stop-motion images in 20 trillionths of a second. Up to four such images can be recorded during each experiment, which lasts less than a billionth of a second. For our recent investigation of cryogenic targets, we implemented the technique of x-ray backlighting, in which an added laser beam strikes a metal target simultaneously with the incidence of the primary laser beams on the ICF target. The metal target emits x-rays, which pass through the ICF target, as it is compressed, producing a time-resolved record of the implosion history.

The Company is a major supplier of targets and target components within the ICF program. The target fabrication effort comprises roughly half of the Company's activities. This effort supports the internal research program at KMS Fusion, and produces target materials and components for the other participants in the program. Several European laboratories also buy the sub-millimeter-sized glass and polymer Microshell® fuel containers that KMS Fusion has developed for fusion use. In 1985 and 1986, record neutron yields were obtained in ICF experiments conducted at the UR/LLE, the University of Osaka Institute for Laser Energetics in Japan, and at LLNL. Both UR/LLE and LLNL used fuel containers (targets) supplied by KMS Fusion in these historic experiments. In the Japanese experiments the targets were made using techniques patented in Japan by KMS Fusion. In addition to target fabrication, the Company is pursuing long-term research to develop the large targets needed for the critical experiments to be performed on Nova. These targets involve several techniques and technologies developed at KMS Fusion, including cryogenic fuel, and various new target materials.

In addition to the Company's efforts in materials science and target fabrication, KMS Fusion operates a highly productive experimental facility, the Chroma laser. Chroma is a two-beam laser, capable of producing up to 800 joules of infrared light in a pulse of one billionth of a second duration. This energy can be efficiently converted to visible light, which couples more effectively to the fusion target. The laser is equipped with a pulse stacker, which allows us to synthesize pulses of arbitrary temporal shape, an important parameter for optimal target compression. The Chroma laser is outfitted with two experimental areas. This allows us to carry out one set of experiments, while setting up other experimental configurations. At present, one experimental area is devoted to a unique optical system, devised and patented by KMS Fusion, which enables us to illuminate a target uniformly from all directions, using the light from the two beams of Chroma. Either gas-filled or cryogenic targets can be imploded in this target chamber. The other experimental area is used to explore the physics of radiation-driven targets, and to conduct other experiments on laser-matter interaction.

Renewal of KMS Fusion's Contract

KMS Fusion conducts ICF research under a series of multi-year contracts with the Department of Energy. The previous, five-year contract expired at the end of 1986. In the summer of 1986, the Nevada Operations Office of DOE issued a request for proposal for ICF research. KMS Fusion submitted a proposal, as did a team consisting of the Grumman Corporation, Lockheed, Eastman Kodak, and the University of Rochester. Early in January, 1987, the DOE announced that KMS Fusion had been selected to negotiate a three-year contract, with two possible one-year extensions, on the basis of its proposal.

Under the new contract, KMS Fusion's efforts are more closely tied to the programs of the other laboratories, especially the national laboratories. Each program participant (including KMS Fusion itself) is invited to submit tasks for KMS Fusion to carry out. These include target fabrication and diagnostic development, in support of experiments at the other facilities, and supporting experiments to be conducted on the Chroma facility at KMS Fusion. Technical direction for the KMS Fusion program is provided by the lead laboratory office at LLNL, as in previous years. It is anticipated that contract negotiations between KMS Fusion and the DOE will be complete by 1 May 1987.

KMS Fusion is the only private company active in the ICF program. As a private company, KMS Fusion's role is fundamentally different from that of the government laboratories or university researchers. We place greater emphasis on the support we provide the other participants in the program, and we are alert to opportunities to transfer technology developed in the fusion program to other government programs, and to commercial markets. Thus, we ensure that the maximum near-term benefit will result from expenditures made in long-term research.

Recent Progress in the ICF Program

Over the past year, excellent progress has been made in the ICF program. The Nova laser has begun to operate on a regular experimental schedule, and has been equipped with an extensive set of diagnostic instruments. As a result, Nova experiments are beginning to yield a highly detailed picture of the interior physics of classified, radiation-driven target. Additionally, since the Nova targets are larger than those used on other systems, they can be constructed with "built-in" diagnostic features, adding to the wealth of data the Nova experiments yield.

Several of the advances made within the ICF program have been the result of collaborative efforts among the program participants. A new technique for reducing the effect of illumination non-uniformities on the target implosion has been developed at the Naval Research Laboratory. This technique, called Induced Spatial Incoherence (ISI), has been employed in preliminary target experiments conducted at NRL by a team of researchers from NRL and LLNL. During the coming year, ISI will be implemented in experiments conducted at KMS Fusion. The ISI technique promises to reduce the degree of uniformity of illumination required in ICF experiments.

Progress has been evident in the other ICF laboratories as well. KMS Fusion has completed a cryogenic target apparatus for the University of Rochester. This apparatus will be installed on the Omega laser over the coming year. It is anticipated that fuel densities as high as 200 times the density of liquid hydrogen can be achieved on this facility, using the cryogenic target technology and diagnostic techniques pioneered at KMS Fusion.

Driver development continues both at LANL, which is constructing the Aurora excimer laser, and at Sandia Laboratories, where work continues on PBFA-II, a light-ion driver. Target experiments are expected to begin at both laboratories in 1988.

Military Applications of ICF

From the start of the ICF program, its objectives have been defined as "military applications in the near term, and energy applications in the long run." Recent progress in the program, much of it of a classified nature which cannot be described herein, has brought the program much closer to the first goal, producing information relevant to military applications.

During the past year, a comprehensive study of the military applications of ICF was completed by Dr. William Hogan, of LLNL. Dr. Hogan's study indicates that if an ICF facility were constructed which would yield in excess of 100 Megajoules of fusion energy, it could provide many types of useful data for the nuclear weapons program. Current estimates indicate that such a facility would require a driver - either a laser or particle beam - generating pulses of several megajoules of energy. It is anticipated that a driver of that size could ignite and burn thermonuclear fuel efficiently enough to produce 10 to 100 times as much energy as was provided by the driver.

A collaborative effort is now underway within the ICF program to refine the design of a laboratory microfusion facility, of sufficient size to demonstrate the feasibility of net energy release, and to meet the requirements of military applications. The availability of such a facility would be particularly useful in the event of a comprehensive test ban treaty, both for the information it would generate, and in helping to retain a qualified cadre of nuclear designers in the national laboratories.

The 1988 Budget Request

The President's budget for 1988 requests a total of $112.5 Million in operating funds for the ICF program, compared to a total of $142.7 Million in 1987. The impact of such a reduction would be profound. Even at the current level of funding, it is not possible to operate the Nova laser on a cost-effective schedule, and to support the highly classified portion of the program at a productive level. All of the major participants in the ICF program have experienced a significant reduction in force over the past year. To cut the program funds by over 25% from its current level would cripple the program, at a time at which several of its facilities are approaching peak productivity.

In 1985-86, a committee of experts, convened by the National Research Council, reviewed the Inertial Fusion program. Their final report stated that "The Committee unanimously recommends that the budget should be stable during this five-year period, and at a level adequate to achieve the highest priority objectives, which, we believe is approximately at the current level ($155 Million/Year)." Thus, the Happer Committee recommended operating funds at a level of $155 Million, in 1986 dollars, which, in 1988 dollars, would be close to $167 Million. The Administration request for 1988 falls far below the Happer Committee's recommendation.

Our role at KMS Fusion is to provide support to the major facilities of the program, including target fabrication, diagnostic development, conducting supporting experiments, and expanding the data base of physics and technology. In 1987, we shall not be able to carry out all the tasks requested of us by the other laboratories, due to limitations on funding. Given the overall restrictions on funding in the program, we recognize the necessity of only carrying out those tasks of highest priority. Simply to sustain the same level of effort in 1988 will require operating funds totalling $14.3 Million for KMS Fusion, and this is the amount that we request.

STATEMENT OF THE GAS-COOLED REACTOR ASSOCIATES

Mr. Chairman and Members of the Subcommittee, my name is Vincent S. Boyer, and I am Chairman of the Gas-Cooled Reactor Associates (GCRA) Management Committee. GCRA is a utility/user organization that supports the development and commercialization of the High Temperature Gas-Cooled Reactor (HTGR) as a second generation, advanced nuclear alternative for the turn of the century and beyond. My personal nuclear career experience began with the HTGR as I was involved from the start with the Peach Bottom I HTGR. This plant was owned and operated by the Philadelphia Electric Company where I served for over 25 years in all facets of their nuclear power business including my position as Senior Vice President for Nuclear. As plant supervisor for the Peach Bottom I plant, I can attest first-hand for the attractive features of the HTGR that have been the bases for our utility's dedicated support for the concept. The HTGR remains our preferred nuclear option and we are hopeful it will be available by the turn of century when we can foresee needing to order new capacity.

As you know, the Modular High Temperature Gas-Cooled Reactor (MHTGR) has been established as the single focus of the HTGR Program. Support for the MHTGR continues to grow as the need for a superior, second generation of nuclear power is increasingly recognized. The bases for and the representation of the broad utility/user support for the MHTGR is reflected in the recent Joint Utilities' Statement in Support of the MHTGR Program that has been submitted to this and other Congressional Committees which have oversight responsibility for the HTGR Programs at the DOE and the NRC. Recognizing the depressed state of the nuclear power industry, the overall "withdrawal-from-nuclear" tendencies of many utilities over the past decade, the history of low budget priority for the MHTGR at DOE, plus the early post-Chernobyl "bad press" that all reactors received, particularly graphite reactors in the U.S., the Joint Statement is considered a most significant input to Congress. Philadelphia Electric Company has endorsed the Joint Statement with the view that the MHTGR is the nuclear option with the most potential to be responsive to the constraints and uncertainties associated with nuclear expansion in the U.S.

After two and a half years of development and near-completion of its conceptual design, our assessment of the MHTGR indicates that it will meet or exceed the stringent utility/user requirements developed through GCRA. Our approach has been to effect an optimum design through the maximum application of passive safety and modularity. Results to date add promise to the expected, significant benefits that are enumerated in the Joint Statement. For added emphasis, these benefits are summarized from the view of the involved parties most important to the utility/user industry, i.e. the general public, rate payers, the investment community, and the plant owner/operator. From a public perspective, the expected benefits derive from enhanced safety margins that virtually assure no public health and safety concern to the extent that offsite public evacuation and sheltering plans are not required. From a ratepayer perspective, the benefits derive from the essentials of economic, reliable electricity supply. From an investor perspective, the benefits derive from the inherent investment protection against equipment failure and operator error, the reduced construction schedule and related cost escalation risks, plus the eased financing associated with adding capacity to match load growth requirements. From an owner/operator perspective, the benefits derive from all the above plus the simplicity and user-friendly features of operation and maintenance.

However, no utility is interested in buying a paper reactor for which a prototypical design has not been demonstrated. As noted in the Utilities' Joint Statement, our goal is to establish the MHTGR as a proven, commercial alternative before the turn of the century. To accomplish this goal, three distinct efforts are involved. The first effort deals with the regulatory-licensing risks which are being addressed through the ongoing DOE and NRC programs. The second effort addresses the economic risks of plant costs and performance through the construction and operation of the first MHTGR power station. The third effort involves the formation of a capable vendor entity that will financially support and deliver the initial plant as well as provide follow-on commercial plants and services. GCRA has consistently supported the establishment of an MHTGR Program that would address these efforts through a joint government and private-sector effort to build an initial prototypical plant.

For measurable progress on the first effort, the DOE HTGR Program has fulfilled its 1986 and 1987 milestones of major document submittals to the NRC. With these documents submitted, the NRC is actively interacting with the MHTGR Program and, to date, it appears that the MHTGR has been well received. Our near-term goal is a positive Licensability Statement from the NRC by January 1988. If this is received, the first phase of substantiating the licensability of the MHTGR's passive safety concept will be completed. Following this, we need the completion of the preliminary design and a Preliminary Safety Analyses Report (PSAR) review and acceptance by the NRC to reach the next phase of licensability - a Construction Permit for the prototype plant.

The Construction Permit is an obviously essential milestone in support of the second effort - building and operating the prototype plant. This effort addresses the MHTGR's economic viability and it is increasingly less dependent upon government support. In cooperation with the other major Program participants, GCRA is actively developing a private-sector initiative to build and operate the first MHTGR. Through the Project development effort to date, an initial definition of the requirements and scope, an initial estimate of the costs and schedules and the overall benefits and limitations of a cooperative MHTGR Project have been established. Through this effort, an optimum approach for an initial Project has evolved. It is based on an initial limited commitment for a one-module prototype plant that provides performance results for the subsequent commitment for expansion to a four-module lead commercial plant. Ongoing Project activities are focused on identifying and developing multiple sites and applications as options for such a prototype/lead commercial plant in parallel with the development of cost/risk sharing arrangements as the bases for an MHTGR Project initiative.

The third effort is closely interrelated with the Project development activities. You have heard from GA Technologies of their intent to form a joint venture MHTGR vendor entity. GCRA actively supports such a joint venture as it would make a substantial contribution to our ability to move forward with a private-sector Project initiative and proposal for specific Government support.

Crucial to the furtherance of any MHTGR Project initiative is stable DOE support. Accordingly, Congressional action is needed to legislate a phased commitment structure for future DOE support. Each phase could mandate an increasing threshold of non-DOE support necessary to release the DOE funding provided by Congress. The added motivation to deliver agreed-upon milestones within the prescribed funding splits and within DOE funding caps would foster improved programmatic progress as well as stability. A timely first application of this phased commitment could begin in FY-1988. It would encompass the preliminary design development through the submittal of the PSAR plus the establishment of an agreed-upon Project Plan to deploy the prototype/lead commercial plant.

As noted in the Joint Statement, it is recommended that Congress provide $35 million within DOE's Advanced Reactor Program for FY-1988 for the MHTGR Program. The primary goal of the MHTGR Program during FY-1988 should be a positive Licensability Statement from the NRC, the conduct of the preliminary design and critical technology development to specifically support the initiation of a PSAR plus develop an agreed-upon framework for a phased commitment to the prototype MHTGR Project. With this level of funding in FY-1988 and approximately $45 million in FY-1989, the PSAR would be completed by the end of FY-1989 and a detailed, agreed-upon Project Plan would be available in January 1989 as the basis for the next phase of MHTGR development. In addition, continued budget support at the NRC is crucial to the MHTGR Program. For FY-1988, approximately $2 million has been planned by the NRC in their advanced reactor programs and we urge Congressional support for this effort.

The fact that HTGR technology remains a candidate option for nuclear power despite a substantially lower funding commitment from the federal government throughout its development is evidence of the inherently less challenging nature of the technology. My own experience with the construction and operation of the first HTGR power plant through the 1960's and early 1970's fully supports this view. The MHTGR design consolidates the best elements of the past three decades of HTGR experience into a design that is responsive to the challenging requirements for the future. These facts give us confidence that the relatively modest additional funding projections required to establish the MHTGR as a commercial option are valid.

Mr. Chairman, the MHTGR Program is at a critical period of moving into preliminary design and the preparation of a PSAR that will be the basis for an application to construct the prototype/lead commercial plant. A Project strategy framework that stabilizes the DOE support and thereby provides a solid basis for broad private-sector R&D support and investor participation must be established. This Subcommittee's continued support is crucial for FY-1988 and the phased commitment framework discussed earlier. We look forward to follow-up discussions with you and other Congressional Committees on this subject.

JOINT UTILITIES' STATEMENT ON THE MHTGR PROGRAM

The Modular High Temperature Gas-Cooled Reactor (MHTGR) deserves high priority in the U.S. Advanced Reactor Development Program for the following reasons:

- A significant number of U.S. utilities support the development of the MHTGR and represent a large potential market payoff for the National R&D investment. Utility support stems from the attractive features of the MHTGR design, particularly the enhanced safety, investment protection, simplicity and flexibility, plus the risk coverage of assuring a future nuclear option for broad utility deployment. At present, U.S. utility/user support for the MHTGR is organized through Gas-Cooled Reactor Associates (GCRA). The goal of GCRA and the Program participants is to establish a proven and commercially available MHTGR before the turn of the century that meets the needs of the utility/user industry and the Nation as a whole.

- The MHTGR offers a unique potential within the nuclear options for high-temperature process-heat and coal conversion applications that could displace uncertain future supplies of gas and oil associated with the inevitable higher prices or a crisis disruption in foreign supply. This capability is greatly enhanced by the MHTGR's modest power rating and siting advantages.

- The MHTGR is ideally suited for export, particularly to the high growth, third world countries, because of its modest power rating, large content of shop fabrication, proliferation resistant fuel cycle, sabotage resistant design features and overall user-friendly characteristics. This not only represents a favorable impact to future U.S. trade but enhances international energy security and reduces the threat to the U.S. nuclear industry from potential foreign nuclear incidents.

The attractive features of the MHTGR are a result of the following attributes:

- The use of coated particle fuel wherein each fuel microparticle is enclosed in its own multi-layered, temperature tolerant containment system.

- The high temperature stability and heat capacity associated with the graphite core structure, thus providing a heat sink for residual decay heat in the case of a loss of normal cooling.

- The negative temperature coefficient of the core design that causes shutdown in the case of a loss of normal cooling without need for operator actions or other than battery-powered systems.

- The single-phase helium coolant that provides a chemically and neutronically inert environment for the primary circuit and uniquely allows a safe reactor design with a total loss of cooling and coolant.

- The limited size and power density of a below-grade reactor along with passive decay heat removal capability that limits the maximum fuel temperature to assure adequate fission product retention in the coated fuel particles for all licensing basis events without consideration of operator actions or other than battery-powered systems.

- The use of a once-through, low-enriched uranium fuel that simplifies front-end and back-end fuel cycle requirements.

As a result of these attributes, the MHTGR is expected to provide key benefits that address the technical, economic and policy issues that have plagued nuclear power over the last decade. Specific expected benefits are summarized as follows:

- Eased licensing and siting as well as enhanced public acceptance associated with the passive safety design concept that is both demonstrable and transparently evident. For example, the enhanced safety margins result in offsite doses for all licensing basis events that are below the limits requiring public evacuation and sheltering plans.
- A forgiving reactor system relative to equipment malfunctions and operator error that safeguards the owner's investment.
- Reduced capital and operating costs associated with elimination of many complex, safety-related engineered components and systems.
- Reduced field labor, construction schedule and cost uncertainties plus enhanced standardization and learning benefits due to the large content of shop fabrication.
- Easier financing due to low capital requirements plus reduced financial risk associated with a flexible match to load growth requirements.
- Economic fuel cycle costs without the need for recycle or consideration of nuclear proliferation policy issues.

Further, the completion of the development and demonstration effort for the MHTGR requires very modest resources in relation to the past and projected investments for overall reactor development.

The MHTGR development work to date has engendered confidence that the design can meet the challenging utility/user requirements developed by GCRA. While the FY-1987 DOE funding level of $20 million was less than an optimum allocation of resources for timely Program development, priority development has been maintained for design and licensing at the expense of deferred technology development and the termination of advanced applications development. The results of the ongoing safety assessment of the MHTGR design by the NRC, leading to their Safety Evaluation Report and Licensability Statement, will be a vital factor in the forward support for an initial Project.

During the past year, utility financial support through GCRA for the MHTGR was approximately $3 million, on par with the utility support for the Advanced Light Water Reactor (ALWR) via general utility R&D funding managed by EPRI. Particular emphasis was on a Demonstration Project initiative leading to the goal of commercial deployment before the turn of the century. The information developed with regard to cost, schedule, demonstrability and Project development strategy have been a positive contribution toward realizing the achievability of MHTGR commercialization. However, in recognition of the low priority assigned to the MHTGR within DOE's FY-1988 budget proposals, Congressional leadership is called upon to assure that a focused MHTGR Program is sustained at DOE while continued efforts by GCRA and the other Program participants are advanced toward an optimum Project to build the initial MHTGR plant.

To this end, we respectfully recommend that Congress provide $35 million within DOE's Advanced Reactor Program for FY-1988 for the continued design, licensing and critical technology development of the reference four-module, 550 MWe MHTGR plant. This budget level is important to assure a realistic technical resource base and communicate Congressional support for Program stability. This budget level will be invaluable for the continued development of a private-sector Project initiative and will foster prospects for expanded international cooperation. Ideally, this will be the first year of a multi-year Phase II commitment by all parties leading to NRC's issuance of a Preliminary Design Approval of the MHTGR design and a construction permit for the initial plant. In addition, it is recommended that the NRC's budget be adequately funded to assure a timely safety review and issuance of a Licensability Statement, currently scheduled for January 1988, and to support the ongoing licensing development process for the MHTGR.

This Joint Statement is respectfully submitted to the Congressional Committees with oversight responsibility for the Nation's nuclear power development programs as evidence of the broad utility/user support for the MHTGR Program.

R. F. Walker
R. F. Walker, Chairman & CEO
Public Service Company of Colorado
Chairman, Gas-Cooled Reactor Assoc.

J. L. Everett
James L. Everett, Chairman & CEO
Philadelphia Electric Company
Vice Chairman, Gas-Cooled Reactor Assoc.

H Dean
C. H. Dean, Chairman, Board of Directors
Tennessee Valley Authority

E. James Ferland
E. James Ferland, Chairman, Pres. & CEO
Public Service Electric & Gas Company

J. D. Geist, Chairman, President & CEO
Public Service Company of New Mexico

Robert M Ginn
Robert M. Ginn, Chairman & CEO
Centerior Energy Corporation

LARRY HOBART
Larry Hobart, Executive Director
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George A Maneatis
George A. Maneatis, President
Pacific Gas & Electric Company

Robert J. O'Connor
Robert J. O'Connor, President & CEO
Idaho Power Company

A J Pfister
A. J. Pfister, General Manager
Salt River Project

Justin Rogers
Justin Rogers, President & CEO
Ohio Edison Company
& Chairman, Pennsylvania Power Co.

Donald F Schnell
Donald F. Schnell, Vice Pres.-Nuclear
Union Electric Company

Leroy W. Sinclair
Leroy W. Sinclair, President & COO
New York Power Authority

Jack E Thomas
Jack E. Thomas, Exec. Vice President
San Diego Gas & Electric Company

Bernard C. Trueschler, Chairman &
Baltimore Gas & Electric Company

Keith L. Turley
Keith L. Turley, Chairman & CEO
Arizona Public Service Company

STATEMENT OF THE COUNCIL OF ENERGY RESOURCE TRIBES

The Council of Energy Resource Tribes (CERT) is a tribal organization composed of the voluntary association, by act of their governing bodies, of 42 federally recognized Indian tribes. Collectively, these 42 tribes govern an area of the United States larger than all of New England, with Pennsylvania and Delaware added. These tribes possess and produce substantial quantities of oil, gas, and coal; and the Jackpile Mine, once the largest open-pit uranium mine in the world, was located on the reservation of one of the CERT tribes. These 42 tribes represent more than one-half of all Indians living on reservations, and more than one-half of all Indian lands in the lower 48 states.

For several years, the Department of Energy has administered an interagency contract with the Council of Energy Resource Tribes, a contract through which the Department of the Interior, the Administration for Native Americans, and the Environmental Protection Agency, as well as the Department of Energy itself, all participate. The Department of Energy's contribution to this contract has been nominal in recent years, and is $200,000 for FY 1987. The substantial benefits which have accrued to both the government and the CERT tribes, however, have been out of all proportion to the relatively modest amounts contributed by any one of these agencies.

As the President himself stated in his request for appropriations for FY 1987:

> ". . . support for priority projects of the 39 CERT member tribes is enhanced by financial support from the Department of Energy, the Administration for Native Americans, and the Environmental Protection Agency. The management and program efficiencies of interagency coordination through a single contract to 39 tribes that are geographically dispersed, increases the results from limited resources."

This interagency contract has allowed 42 tribes to coordinate the activities of, and to achieve a synergy from, the programs of four Interior Department agencies and three other Departments, something the government itself has been unable to accomplish on Indian lands. Like the business of government itself at any level, however, this work is far from done.

Three of the CERT tribes have been designated as affected tribes under the Nuclear Waste Policy Act of 1982, and the CERT staff provides technical support to two of these in their participation in the site characterization phase of the BWIP project. The costs to the government would be considerably greater if both of these tribes were required to maintain individual technical consultant services to accomplish this work. Three of the CERT tribes are producing substantial amounts of coal, and the CERT staff provides technical and coordinating services to these tribes in such diverse areas as abandoned mine land reclamation issues and Interior Department rulemaking for coal valuation procedures. Eleven of the CERT tribes produce oil and gas, and the CERT staff provides technical services to these tribes in such areas as negotiating farm-out agreements; oil and gas valuation criteria; brine disposal; identifying drainage situations; production and royalty accounting and management; and federal, state, and tribal taxation issues. Each of these tribes has need of all these services, and yet none could afford to maintain all these disciplines on its payroll individually. In addition, the lands of many CERT tribes serve as valuable corridor properties for the transportation or transmission of energy products in the form of coal haul roads, pipelines for oil and gas, or the transmission of electricity. The CERT staff has assisted some of these tribes in negotiating rights-of-way for these corridor properties that have resulted in revenues literally thousands of times greater than those offered or recommended by the Bureau of Indian Affairs. One CERT tribe has some hydroelectric production, and receives substantial rental from, pending recapture of, a major hydroelectric plant now owned by an investor-owned utility.

The Department of Energy's FY 1988 Budget Request for Departmental Administration proposes to discontinue support for the Indian Affairs activity from the FY 1987 level of $200,000 to zero, based on the "self-sufficiency" of these tribes. See, pp. 358-359, 361. While we believe that the Department of Energy can take justifiable pride in the leadership it has shown, and the measurable accomplishments it has achieved in this area in recent years, we regret to advise this committee that self-sufficiency can hardly be said to have been achieved by the CERT tribes, although production from our lands is substantial, even in today's depressed industry. The Chairman and Chief Executive Officer of Southern California Edison told us less than a year ago that 20% of the electricity consumed in Southern California is generated from Indian-owned coal. Southern California Edison News, May 1986.

Notwithstanding the substantial production from our lands, not one of the CERT tribes can reasonably be said to have achieved self-sufficiency. Unemployment on our reservations continues to average more than 60%, and it is precisely those reservations that contain valuable resources that offer the best opportunities for reversing this situation.

The CERT tribes believe that much that has been accomplished would be lost if this interagency contract were to be dismantled. The efforts of those affected tribes under the Nuclear Waste Policy Act would clearly be disrupted, and additional costs incurred, if their joint staff were disbanded. The Secretary of the Interior's currently proposed regulations for valuation of oil, gas, and coal clearly reflect many of the suggestions made by the five CERT tribes who serve on his Royalty Management Advisory Committee. The cooperative participation of these tribes in such governmental activities would be seriously hampered if our joint staff were to be disbanded. The ability of 42 tribes who collectively govern an area larger than New England to support the Secretary of Energy's proposed rulemaking, as we did in the FERC proceeding that resulted in Order 451, would be disestablished. The capability that one CERT tribe presently enjoys by virtue of its access to this multi-tribal staff to work cooperatively with the Corps of Engineers and DOE's Southwest Area Power Administration in the more than $100 million financing and construction of a 36.5 MW hydroelectric generating facility on the Arkansas River in Oklahoma could be replicated only at great expense, which the tribe itself cannot afford. The capability of another CERT tribe to implement the more than $49 million settlement, recently negotiated with assistance from the CERT staff, for the reclamation of what was once the world's largest open-pit uranium mine would be affected if the staff that has provided assistance through literally years of negotiation should no longer be available. During the period of the biggest collapse of oil prices in history in 1986, one of the CERT tribes attracted to its reservation and agreed for valuable consideration to sign an exclusive agreement to negotiate with a major oil company. This was done via a geological prospectus which the CERT staff developed for the tribe, and the tribe is expecting this staff to continue to be available during the negotiations which are presently underway.

These are but a few examples of our earlier statement that the benefits to both the government and the tribe have been out of all proportion to the relatively modest amounts which DOE, or any other agency, has contributed to the interagency agreement which the Department of Energy has administered with the Council of Energy Resource Tribes. The tribes which compose the Council of Energy Resource Tribes do not believe that they should now be penalized for the success they have demonstrated in working cooperatively with, and in driving coordination of, several government agencies, each of which has clear responsibility for providing services to these tribes.

If the tribe with an abandoned 400-foot highwall directly abutting one of its villages had not been able to negotiate with the mining company an acceptable settlement for reclamation of the Jackpile Mine, the tribe would have had no recourse but to file suit against the government for breach of trust and for the expense of conducting this reclamation. The legal expenses alone to the government would have far outstripped by several times the modest DOE contributions which helped make that negotiated settlement possible. If the CERT staff had not devised the strategy by which Congress has authorized this unique strategy of tribal financing and construction of a hydroelectric plant that will ultimately be owned and operated by the Corps of Engineers, with power to be marketed by DOE's SWPA, the government would not have this 36.5 MW of power in its base load plan for the Southwest region. The estimated savings to the government in brick-and-mortar construction costs alone on this project is $80 million. These two examples alone should make it abundantly clear that the modest contributions which DOE has made to this interagency agreement must rank among the very best investments the government has made in recent years.

Turning now to the justification which DOE proffers for its proposal to discontinue this program in FY 1988, namely that our tribes have self-sufficiency, nothing could please us more than to concur in this assessment. Unfortunately, nothing could be further from the truth. Our reservation communities continue to suffer from a standard of living far below that of our non-Indian neighbors, and unemployment continues to average over 60% on our reservations. Our tribes are not requesting federal appropriations or programs in an amount sufficient to remedy these conditions. Rather, we are merely requesting that the Department of Energy be directed to continue to provide the modest level of assistance that it has provided in recent years to enable us to continue to do for ourselves what government agencies themselves have been unable to do over scores of years with millions of dollars.

The domestic oil and gas industry on Indian lands has not been immune to the price collapse of 1986. Not only have the revenues of the producing tribes plunged dramatically, but literally thousands of wells on Indian lands have been either shut in or plugged and abandoned. On many reservations, the tribes themselves are negotiating with producers to keep these lands in production. Some of these take the form of agreeing to temporary shut-ins; negotiating interim royalty reductions; and some of the tribes are actually negotiating to acquire the working interest in the production. In all these situations, however, the tribes' need for geological, technical, and financial expertise which the government cannot provide directly is urgent.

The domestic oil and gas industry is undergoing a dramatic restructuring, and this restructuring provides the producing tribes with an unparalleled opportunity to participate directly in the marketplace. In the past year, we have met with utility, pipeline, and production officials, and we have encountered a willingness to share participation that was unknown in the boom days of a few years ago.

The CERT tribes do not believe that additional appropriations will be required, nor does our request entail additional FTE or other federal employees. The mechanism for administering this contract is in place, and the accounting, financial, and auditing systems are well established.

Our request, rather, is that this committee simply direct the Department of Energy in Fiscal Year 1988 to continue to administer the interagency contract with the Council of Energy Resource Tribes, and to contribute $200,000 to that contract in FY 1988.

On behalf of the 42 Indian tribes of the Council of Energy Resource Tribes, thank you very much for your thoughtful consideration of this modest, but important request.

STATEMENT OF FUNCTION POWER ASSOCIATES

I am testifying today to suggest that the Subcommittee fund both the magnetic confinement fusion and inertial confinement fusion programs at levels of about 10% above the current FY 1987 levels. Both programs have been making good technical progress but have been hampered by declining levels of support during the past few years. The large experimental facilities required for this research require operating budgets commensurate with their size and complexity.

The magnetic fusion program recently received a favorable technical review by the DOE's Energy Research Advisory Board (ERAB) and the inertial confinement fusion program also received a strong endorsement from a review panel of the National Academy of Sciences.

Many of our experiments are reaching their years of peak productivity. Thus it is both appropriate and timely that several new experiments have funding allocations in the DOE FY 1988 budget request. Fusion Power Associates supports these initiatives.

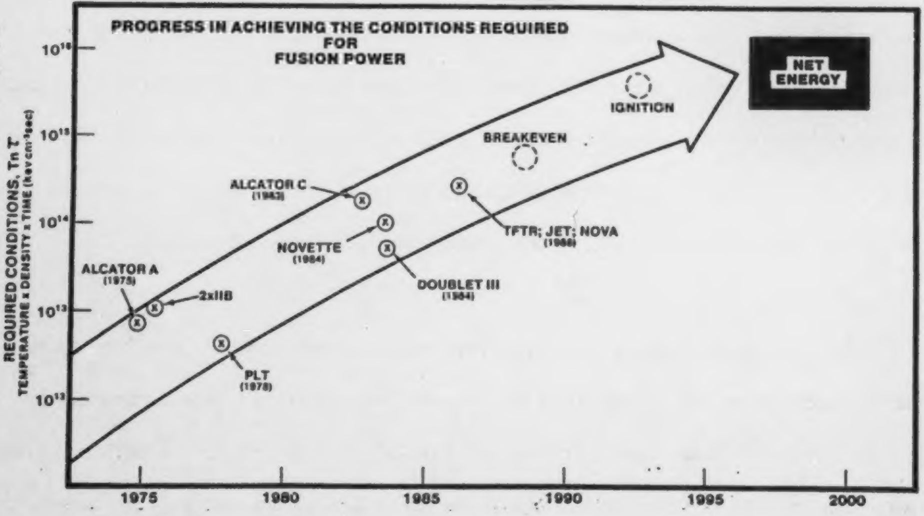
The proposed Compact Ignition Tokamak (CIT) represents a major step forward along the road to fusion power. Although a technically more ambitious facility would be desirable, we recognize that financial considerations have been a major consideration in setting the design goals for the proposed CIT. The CIT facility is a cost-effective compromise that will provide both important scientific information and a meaningful technological challenge. It should however be seen as a stepping stone to a true Fusion Engineering Test Reactor to be built in the 1990's. We support the international efforts to define and design such an engineering test facility.

With the demise of the U.S. magnetic mirror program, it is more important than ever to maintain a program of innovation on smaller experiments and on systems studies. These programs include the reversed field pinch, stellarator, field reversed concepts, and spheromak programs; development of advanced inertial fusion "drivers," studies of advanced fuel cycles and conceptual studies of fusion power plants and other fusion applications. The technology required for future fusion devices and advanced materials development must also receive continued support.

Within the limited funds available the DOE strikes a reasonable balance among the various component fusion subprograms, with the exception of a continued unwillingness to recognize and support an adequate program in longer-range technology development, in fusion reactor conceptual design and the associated systems studies required to ensure that the present day R&D programs may lead to practical products. In my view, approximately 10% of the fusion budget should be spent on systems studies. This compares to the few percent now so-allocated.

The programs proposed for both magnetic and inertial fusion are constrained to move more slowly than their natural pace by the funding requested. All of the experimental projects will proceed more slowly than they could, because of budget constraints. It would be better in my view to provide an increment to the FY 1988 budget in order to proceed at a faster pace. Inertial fusion, in particular, must not be reduced below the FY 1987 level as proposed in the Administration's request.

As the accompanying chart illustrates, there has been systematic technical progress in the fusion program towards the goal of fusion power. The technical achievements have been accompanied by a growing scientific understanding of the fundamental science of plasma physics, leading to a better predictive capability for future experiments.



STATEMENT OF THE ALABAMA POWER CO.

Mr Chairman, members of the Subcommittee, I am Herbert M. Boyd, Technology Management Coordinator, Alabama Power Company, a subsidiary of the Southern Company. I appreciate this opportunity to present an electric utility industry view on the need of adequate funding for the Department of Energy's photovoltaic research and development program. The proposed funding, in the FY 1988 budget, of $20.4 million is not adequate to meet the basic needs for photovoltaic research and development. I recommend a minimum of $43.1 million during FY 1988 for core research programs plus $7.5 million, as a separate line item, for PV USA.

Alabama Power Company's Involvement in Photovoltaics

Alabama Power Company, at its own expense, has built and put into operation the world's largest amorphous silicon thin film photovoltaic grid connected array. This $1 million, 100 KW demonstration unit produces enough power at the time of our system peak to meet the needs of 25 homes. In addition, Alabama Power Company management represents another subsidiary of the Southern Company, Southern Investment Group, in its joint venture with Chronar Corporation to develop a 1 MW amorphous silicon photovoltaic cell manufacturing facility in Birmingham. The Southern electric system is investing $6.1 million in the manufacturing facility which will begin operation before the end of 1987. Alabama Power Company has made these commitments to photovoltaics because it believes the direct conversion of sunlight to electricity is one of the promising options to help meet the electric demand of the country in the 1990s and beyond.

Photovoltaic Industry

The photovoltaic industry is still very small compared with other high technology industries and profitability is virtually non-existent. It is estimated that during 1986 worldwide revenues from the sale of 27.5 MW of photovoltaic modules was $250 million and the United States had only 27% of the market. The small revenues of the domestic industry cannot support the necessary research to develop the scientific foundations upon which a large scale industry can grow. The partnership between DOE and the industry has produced increased conversion efficiencies and reliability. These improvements have reduced costs from $10,000 per KW in 1980-1982 to $6,000 per KW in 1986. Continued DOE support is needed for research to reduce costs further before photovoltaics can compete with other energy sources. The United States is still a long way from meeting the goal set out in the Solar Photovoltaic Energy Research, Development and Demonstration Act (P.L. 95-590) of producing 2,000 MW annually by 1990 at an average cost of 15 cents per KWH.

DOE Research and Development

Private industry and DOE have had a long and successful partnership in developing photovoltaic energy systems. However, recent reductions and proposed further cuts in DOE's funding of photovoltaic research and development is creating serious problems in the domestic industry's leadership in photovoltaic technology. DOE's funding for research and development increased from $3.5 million in FY 1974 to $150 million in FY 1980. However, since 1980 there has been a sharp downward trend in DOE funds for photovoltaic research and development, and for FY 1986 and FY 1987 it was $40 million. The proposed funding in the FY 1988 budget of only $20.4 million is not adequate to meet the basic needs for photovoltaic research and development if the United States is going to be able to successfully compete for sales in the domestic and overseas markets.

Foreign Competition

United States producers of photovoltaic cells have concentrated their research efforts on developing technology for commercial photovoltaic units while the Japanese have taken the lead in consumer units for watches and calculators. However, as shown in the following table, United States shipments of commercial cells since 1983 have been declining while shipments by other countries have been increasing. The United States share of the world market for commercial units fell from 64% in 1983 to 33% in 1986 and Japan overtook the

United States in shipment in 1986. Europe, India and other countries have also increased their share of the world market on both an absolute and relative basis.

World Photovoltaic Commercial Cell Shipments
(MW)

	1983	1984	1985	1986
United States	9.3	8.4	7.5	7.2
Japan	2.8	5.3	6.4	8.2
Europe	2.2	2.9	3.7	3.4
India/Other	.3	.8	1.8	3.2
Total	14.6	17.4	19.4	22.0

World shipments of consumer modules have followed the same pattern from 1983 to 1986 with United States shipments falling from 3.8 MW in 1983 to .3 MW in 1986 and foreign shipments increasing from 3.3 MW to 5.2 MW during the same period.

The potential world market for photovoltaics is great and the United States needs to maintain a strong research base to remain competitive in the world and domestic markets. The projected world market should increase from 27.5 MW valued at $330 million in 1986 to 150 MW valued at $1,350 million in 1991. Other countries are expanding their photovoltaic research activities. If we do not maintain a sufficient funding for our research programs, it is clear that Japan and the other countries will gain a competitive advantage and the United States will become buyers, not sellers, of the technology in the world market place.

Recommendations

In order to keep the United States competitive in the domestic and world markets for photovoltaics, we recommend a minimum FY 1988 appropriation for DOE of $43.1 million for core research programs, plus $7.5 million for PV USA. The funding for PV USA should be a separate line item in the appropriation. Following are our specific recommendations for funding DOE's photovoltaic research and development programs in FY 1988 and the appropriations for FYs 1986 and 1987.

Photovoltaic Research and Development
(Millions of Dollars)

Program	FY 86	FY 87	FY 88 Recommendation
Material Research			
1. Amorphous silicon thin films	9.4	8.0	9.5
2. Thin films	3.9	5.0	8.5
3. High efficiency research	7.4	6.0	7.7
4. PV fundamental research	4.3	5.0	4.0
Collector Research	6.6	4.5	10.0
Technology Diffusion	3.1	1.6	2.0
System	4.4	9.3	-
Capital Equipment	1.2	1.0	1.4
Core Programs			$43.1
PV USA			7.5
TOTAL	$40.3	$40.4	$50.6

I want to thank the Subcommittee for supporting the photovoltaic research and development programs during the past years. Also, in closing, I would like to stress that it is society's responsibility to insure adequate and efficient technologies are available in the future to meet its energy requirements. Research dollars are required today if we want this to occur by the 1995-2000 timeframe. We, the electric utility industry, are looking to you to provide continued direction and incentive for the research that needs to be done in photovoltaics. The best statement you can make to our industry is that Congress will continue to support the development of new energy producing technologies.

Thank you very much.

STATEMENT OF THE GAS RESEARCH INSTITUTE

I appreciate the opportunity to submit testimony which presents Gas Research Institute's (GRI) FY 1988 budget recommendations for gas-related research in the Department of Energy's (DOE) Solar and Renewables R&D Program. The recommendations reflect the minimum funding required for a viable gas research program. In developing these recommendations, GRI considered the severe pressure on the federal budget and the need to reduce expenditures. In this vein, GRI and the gas industry have agreed on a recommendation of $21 million. This level of funding will continue programs Congress approved for FY 1987.

GRI is an independent, not-for-profit scientific research organization that plans, manages, and finances a cooperative R&D program for the benefit of its 252 members and their customers. The R&D program is implemented through contracts with research organizations, engineering firms, universities, energy companies, and manufacturers. National energy R&D policy is a major factor influencing the GRI R&D program since GRI cofunds and coordinates many of its research projects with DOE. Therefore, congressional action on the proposed FY 1988 DOE budget has a direct impact on the gas industry's R&D program.

DOE ENERGY POLICY

The DOE FY 1988 budget request accelerates the shift started three years ago to increase funding for defense-related activities while significantly reducing spending for nonnuclear energy R&D. In fact, energy-related R&D in the DOE budget is now only approximately one-third of the total request, and funding for solar R&D is 45 percent less than Congress appropriated for FY 1987. The most recent Congressional Budget Office report on the Administration's FY 1988 budget request clearly illustrates the drastic reduction in all nonnuclear R&D since 1981. (See Exhibit 1.) Funding for these programs has decreased by an average of 85 percent since 1981 compared with the FY 1988 request.

EXHIBIT 1

MAJOR CHANGES IN DOE NONNUCLEAR ENERGY PROGRAMS[1]
(\$ Millions of Budget Authority)[2]

DOE Program	Actual FY 1981	Actual FY 1983	Current FY 1987	President's Request FY 1988	% Change 1988/81
Solar Energy R&D	$549	$202	$124	$ 71	-87%
Energy Conservation R&D	292	134	162	80	-73%
Fossil Energy R&D	997	330	302	169	-83%
Geothermal Energy R&D	156	58	21	16	-90%
Electric Storage/Systems R&D	112	43	28	14	-88%

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[1] The percentage reductions do not reflect the effect of inflation on the real program level. Nineteen eighty-eight dollars are estimated to be worth only 77 percent of their 1981 value, so real reductions are even greater than displayed above.

[2] Source: Congressional Budget Office

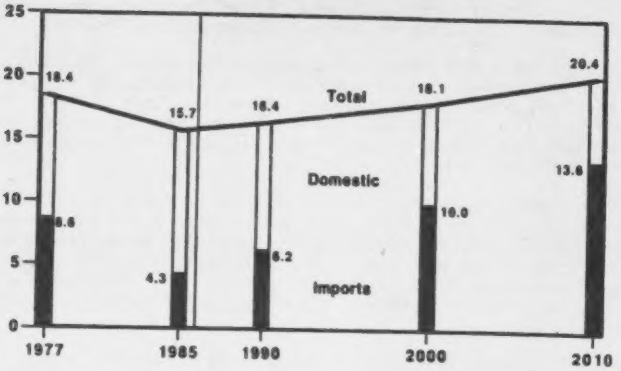
To further dramatize this shift in priorities, the Administration has requested $596 million for the Strategic Defense Initiative (SDI) program in the DOE budget. This is more than six times the total new budget authority requested for all solar research programs. The budget request for solar and other renewables is $91.1 million--well below last year's appropriated levels. This budget does not acknowledge the critical role nonnuclear fuels will play in the U.S. energy future for the next 25 years. The policy of drastically curtailing essential, ongoing nonnuclear energy research while continuing to shift funding to weapons-related research invites severe problems in meeting the nation's future energy demands.

LIQUID FUELS OUTLOOK

A rapid increase in oil imports will result from an unbalanced energy research policy that concentrates nearly all R&D funds on nuclear energy, high-energy physics, and basic energy sciences while essentially ignoring nonnuclear fuels and conservation R&D. U.S. consumption of oil is projected to increase, rising from 15.7 million barrels per day in 1985 to 18.1 million barrels per day in 2000. In the mid-1990s, imports will exceed the 1977 historic peak of 8.6 million barrels per day and are projected to reach 10 million barrels per day by 2000. (See Exhibit 2.)

EXHIBIT 2

U.S. OIL SUPPLY
(Millions of Barrels per Day)



1986 GRI Baseline Projection

Based on EIA's latest data, the nation's gross oil imports during 1986 exceeded 6 million barrels per day--an increase of 1 million barrels per day over the 1985 rate. Total U.S. demand reached 16.1 million barrels per day--the highest consumption level since 1980. Thus, if this trend continues, more than half of the U.S. requirements for petroleum will be imported well before 2000.

For DOE to propose to reduce research funding for solar and renewables by 45 percent is not sound policy. The DOE budget, if enacted as proposed, will hasten the day when oil imports will rise to greater than 50 percent of total U.S. demand.

Over the past several years, Congress has stressed and has appropriated funds for development of domestic nonnuclear energy resources and the more efficient use of energy to reduce dependence on oil imports. Unfortunately, if the U.S. is to have a balanced energy program, Congress must once again restore funding to continue critical programs in DOE's Solar and Renewables R&D Program.

An effective joint research effort by the government and industry requires DOE to do its part and fund a viable long-term research program. This is best illustrated by a General Accounting Office report dated February 11, 1987. It concludes that "private industry has not picked up much of the energy R&D curtailed by DOE." This lack of a viable DOE research effort has significantly delayed U.S. technology development.

GRI is recommending $21 million in DOE's Solar and Renewables R&D Program to fund the long-term technology base. (See Exhibit 3.) In the past four years, Congress has recognized the need for a long-term DOE gas-related program in renewable energy and has appropriated approximately $18 million each year for these DOE programs. The gas industry is seeking a continuation of this trend in FY 1988. Maintaining funding for ongoing DOE programs is critical if the U.S. is to develop the technology required to efficiently use its resources and reduce the dependence on imported oil.

EXHIBIT 3

RECOMMENDED DOE GAS-RELATED BUDGET FOR FY 1988
FOR SOLAR AND RENEWABLES R&D
($ MILLIONS)

	FY 1987 Congressional Appropriation	Gas Industry FY 1988 Recommendation
Biofuels	$12.1	$10.0
Geopressured Resources	4.0	9.0
Liquid Spill Test Facility	2.0	2.0
Total	$18.1	$21.0

RECOMMENDED DOE FY 1987 GAS-RELATED RESEARCH
With the gas industry's rapidly increasing its near-term research activities, it is critical for DOE to continue ongoing long-term gas research to have a viable national program. I will discuss important long-term programs in gas research that this Subcommittee previously supported that require continued federal funding.

	FY 1986 Appropriation	FY 1987 Appropriation	GRI FY 1988 Recommendation
Biofuels	$19.0M	$12.1M	$10.0M

Biomass is now providing the equivalent amount of energy as nuclear or hydroelectric in the U.S., and its realistic potential to make expanded contributions exceeds that of other renewables. If gas from biomass becomes feasible, it could provide a large, significant source of methane.

RefCoM (refuse converted to methane) is a project originally supported by DOE/ERDA. Initially, it demonstrated the biological gasification of municipal solid waste and sewage sludge to produce a methane-rich gas. The program progressed through 1982 when it was discontinued. The program was again funded in 1984 by DOE, GRI, and Waste Management, Inc., to study methane yield, solids reduction and ultimate disposal, mixing characteristics, effluent dewatering, process stability, and energy and chemical requirements.

Based upon results to date, a validation of the RefCoM process in a large-scale field experiment is an appropriate next step. While the technology could have gas industry implications in many situations, there is a broader base of application of the technology where the product gas could be sold "over the fence" as 500 Btu/standard cubic foot of gas or used internally to satisfy both a waste disposal problem or a portion of a larger energy requirement. Therefore, it is appropriate that DOE continue to support the development of this technology. Funding of the RefCoM project at DOE is recommended at $2 million.

The Walt Disney World project was originally known as the Water Hyacinth Project. It began in 1978 with support first from NASA, EPA, and WED Enterprises followed by funding by United Gas Pipe Line Co. and DOE. Its sole objective was nonenergy-intensive wastewater treatment. The successful completion of the wastewater treatment studies led to new areas of research. Under the current sponsor, GRI, the project is evaluating the utilization of a spectrum of community wastes to methane. The overall objective is to develop a multipurpose anaerobic digestion system capable of converting blends of community wastes including sewage grown biomass, sewage sludge, municipal solid waste, industrial wastes, and biomass to cost competitive, pipeline quality methane.

Additional support for the program at Walt Disney World and the associated technology development efforts is required. The reactor at WDW is an advanced reactor that is demonstrating superior performance over available state of the art. Further characterization, optimization, and evaluation of the concept is required, and studies need to be carried out to assess the system and economic implication of this technology for the gas industry and municipalities. It offers an alternative to the mass burning technology that may have both environmental and economic advantages. A DOE contribution of $2 million is required for the Walt Disney World project. GRI's budget in biomass programs in 1988 totals $4.2 million.

Specific goals have been identified which could reduce the cost of gas to about $3/million BTU if research is successful. These new cost goals require advancements in biological and computer control of the systems. Research to date utilizing these advanced technologies has made rapid progress toward reaching the cost goals.

The main research needs relate to improving the convertibility of the biomass feedstock either through improvements in plant composition or through the conversion process itself. Recent work on plant genetics includes the regeneration of sugarcane protoplasts, protoplast fusion, electroporation, the isolation of genes which regulate gene expression (promoters), and the isolation of the sucrose synthetase gene in napiergrass using DNA probes from maize.

These recent advances point to the future feasibility of improving plant composition in the best energy crop candidates. The current thrust of conversion research includes the utilization of advanced immunological techniques, phospholipid analysis, biochemical and gene probes, and, eventually, the wedding of these techniques to electrochemistry and fiber optics. By determining the limiting steps in lignocellulosic breakdown, we expect to be able to speed the process up considerably and improve its efficiency.

Based on an in-house review and discussions concerning program coordination with DOE and the national laboratories, we request the following additions to the DOE program over and above the amounts requested by the Administration. We urge that these funds be used to adequately fund the national laboratories and a significant amount be used for external funding. GRI's recommendations for additional gas-related funding follow.

BIOCHEMICAL CONVERSION

	Proposed Additions	Est. $ 1,000s
SERI	Culture Collection	$ 250
	Biosensors and Antibodies	200
	Reactor Control	300
	Microbial Mechanisms	150
	Phase Separation/Membranes	200
	Engineering/Process Evaluation	300
		$1,400

ENERGY CROPS AND CULTURE

	Proposed Additions	Est. $ 1.000s
Oak Ridge National Labs	Wood Grass Physiology	$ 300
	Wood Genetics	200
	Planting Technology	500
	Tissue Culture	200
	Herbaceous Plant Physiology	300
	Economic Evaluation	200
		$1,700

Geopressured/ Geothermal Energy	FY 1986 Appropriation	FY 1987 Appropriation	GRI FY 1988 Recommendation
	$4.4M	$4.0M	$9.0M

Geopressured/geothermal energy is a unique resource consisting of hot brine and natural gas under pressure. This resource is located principally in the Texas and Louisiana Gulf Coast area but also exists in six other areas in the U.S. The size of the resource is very large. Estimates of the amount of natural gas recoverable from geopressured sources indicate that production of this natural gas could increase the Unites States' natural gas reserves by up to 25 percent, which would represent an additional 15 years of natural gas consumption.

The DOE geopressured/geothermal program is an ongoing research effort of field tests and studies to determine the production behavior of geopressured/geothermal reservoirs in the U.S. Gulf Coast and their potential as future energy resources. This program involves the testing of wells at three field sites: Gladys McCall, Cameron Parish, Louisiana; Pleasant Bayou, Brazoria County, Texas; and Willis Hulin, Vermilion Parish, Louisiana.

The Pleasant Bayou well has produced 4.5 million barrels of brine. Its surface equipment is being revamped to produce pipeline-quality natural gas and feed part of the brine and natural gas to a hybrid electric power plant (supplied by EPRI). This well is expected to contain brine saturated with natural gas as well as possibly free natural gas.

The organizations involved in research on the DOE geopressured/geothermal program include Eaton Operating Company and its subcontractors the Institute of Gas Technology, the Ben Holt Company, and Rice University. They will operate the wells and EPRI hybrid power plant and will collect and interpret scientific data which will allow a better understanding of the scientific principles involved in producing energy from this resource. In addition, the University of Texas at Austin, Louisiana State University, and University of Southwestern Louisiana are involved in data collection and analysis for geologic reservoirs and environmental monitoring. To continue the research programs that have been developed for each well site, $9 million of funding is required in FY 1988.

SUMMARY

GRI recommends DOE fund a viable, consistent gas-related budget in DOE's Solar and Renewables Program which adequately addresses the long-term needs of this nation's energy supply. A total of $21 million in FY 1988 would continue programs Congress has already approved. We believe this budget recommendation is consistent with the realities resulting from a large federal deficit since it is essentially the same as last year's appropriations for these same programs.

GAS INDUSTRY RECOMMENDATION
FY 1988 GAS-RELATED DOE CONSERVATION
AND SOLAR BUDGET
($ Millions)

Biofuels	$10.0
Geopressured Resources	9.0
Liquid Spill Test Facility	2.0
Total	$21.0

STATEMENT OF THE NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

Mr. Chairman, my name is Morgan Dubrow, Chief Engineer of the National Rural Electric Cooperative Association (NRECA). NRECA is the national association of over 1000 rural cooperatives which supply central station electricity to some 25 million people in the rural areas of 46 states. NRECA thanks this Subcommittee for its leadership and the Congress for passage of the 1986 Water Resources Development Act.

We are strongly opposed to the Administration's repeated attempts to dispose of any of the Federal Power Marketing Administrations (PMAs) and are determined to defeat any attempt to sell the Government's electric power systems.

NRECA supports the F.Y. 1988 budget request for the Corps of Engineers, the Bureau of Reclamation, the Department of Energy's PMAs, and other DOE energy programs. We also support DOE's nuclear programs for safety, enrichment, breeder reactor systems, nuclear waste disposal, advanced converters, and high temperature gas reactors. NRECA emphasizes the need for:

- Funding for the 13 new construction starts by the Corps of Engineers.
- $36.1 million for the Central Valley Project, California.
- $23.0 million for the Richard B. Russell Dam, Georgia-South Carolina.
- $33.0 million for Garrison Irrigation Project, North Dakota.
- $6.2 million for Harry S. Truman Dam, Missouri.
- $268.7 million for Central Arizona Project, Arizona.
- $134.5 million for the Central Utah Project, Utah.
- $37.0 million for Columbia Basin Project, and Chief Joseph and Bonneville power plants in the Pacific Northwest.
- $500 thousand for Atmospheric Water Resources Management.
- $19.5 million for Dallas Creek and Dolores projects.
- $164.0 million for the operation and maintenance budget of the Bureau of Reclamation.
- $566.0 million for the five Federal power marketing agencies.
- $876.4 million for nuclear programs.
- $35.0 million for modular high-temperature gas reactors.
- $199.1 million for Clean Coal Technology.

At our 45th annual meeting in Dallas in February 1987, our members again unanimously passed resolutions supporting appropriations for a number of water resource and hydroelectric projects throughout the United States. NRECA appreciates Congress passing legislation and authorizing the Water Resources Development Act of 1986 and encourages funding in an orderly manner.

Opposition to Sale of Power Marketing Administrations

We continue to strongly oppose the President's 1988 budget proposal to dispose of the Federal power marketing administrations, including the Southeastern Power Administration and the Alaska Power Administration. We urge the Congress to reject any request to study the sale of any Federal power marketing administration and the Tennessee Valley Authority. The nation's rural electric cooperatives (over 600 purchase Federal power) are determined to defeat any attempt to sell the Government's dams, transmission lines and electric power facilities.

Income from power sales helps to reduce the Federal deficit over the long term. Also, what will happen to the recreation, flood control, fish and wildlife, and the numerous public purposes for which these projects were built?

Construction for the Bureau of Reclamation

The Administration has increased funding for the Bureau of Reclamation construction program by $98 million which will permit the timely completion of major water resource projects. Also, we are pleased to note the $23.9 million increase for the safety of the dams program. We support the initiating of construction of the Animas-LaPlata Project in Colorado-New Mexico. We would prefer that repayment for the project be over a 50-year payout schedule in accordance with long-standing principles governing power assistance to irrigation projects.

New Construction Starts for the Corps of Engineers

We support continued Federal funding for the 40 new projects funded by Congress in the 1985 Supplemental Appropriations Act, the 29 projects provided for in a 1987 Resolution, and the 13 new construction starts in the F.Y. 1988 budget.

We will continue to examine proposals for new hydroelectric facilities as this Subcommittee and the Congress have done on a project-by-project basis. This will assure that: 1) preference is fully protected, 2) the Federal Government develops and operates the projects, and 3) power is marketed by the power marketing administrations.

Central Valley Project

We support the appropriation of $36.1 million in F.Y. 1988 for the Central Valley Project. The Auburn-Folsom South Unit has a potential of 300 MW of hydroelectric power with the possibility of an additional 400 MW for pumpback units. We support the Bureau of Reclamation in continuing to work with the American River Authority and the Auburn Dam Task Force to develop a financial cost-sharing package and a firm proposal for Auburn Dam.

Richard B. Russell Dam

Funds in the amount of $23 million should be appropriated in F.Y. 1988 for continued construction of the Richard B. Russell Dam Project on the Savannah River between Georgia and South Carolina. It will provide 600 MW of needed hydroelectric power, 300 MW base load and 300 MW of pumpback power.

Garrison Irrigation Project

We were pleased that agreement was reached on the reformulation of the Garrison Diversion Unit with the understanding that the project would have the full support of the Administration. We understand that $43 to $46 million is needed to keep the work on schedule. However, because the demand for Federal funds and the budgetary crisis, we urge the Subcommittee to appropriate funds at last year's level of $33 million.

Harry S. Truman Dam and Reservoir

We support the appropriation request for $6.2 million in F.Y. 1988 to continue construction at the Harry S. Truman Dam and Reservoir which will enable the use of the full hydroelectric potential at this valuable project.

Central Arizona Project

We urge the Subcommittee to appropriate $268.7 million required in F.Y. 1988 to continue the orderly construction of the Central Arizona Project which is vital to the water supply for the State of Arizona. This would provide for the delivery of power to Phoenix and Tucson.

Central Utah Project

We request that the Subcommittee appropriate $134.5 million in F.Y. 1988 for construction of the Central Utah Project. We understand that the Public Power Development Corporation is developing plans designed to provide non-Federal financing for electric power facilities at the Bonneville Unit of the Colorado River Storage Project. This proposal seems to be consistent with the position of the Congress and the Administration and would increase the power available for marketing for preference customers by the Western Area Power Administration.

Columbia Basin and Other Pacific Northwest Projects

We support F.Y. 1988 appropriations of $28 million for the Columbia Basin Project, including river bank stabilization below the Third Powerhouse at Grand Coulee, $3 million for Chief Joseph Power Plant additions, and $6.0 million for the Second Power Plant at Bonneville Dam.

Atmospheric Water Resources Management

We support the F.Y. 1988 $500 thousand request to continue the cloud seeding technology being developed by the Bureau of Reclamation to increase water supplies and hydroelectric generation from increased stream flow.

Dallas Creek and Dolores Projects, Colorado

We support the appropriation requests for $8.5 million to produce 4.2 MW at Dallas Creek, and $11 million to produce 13.7 MW at Dolores Project.

Bureau of Reclamation O&M Budget

We are pleased to note an increase to $164 million in the Bureau of Reclamation O&M budget. However, it does not adequately meet the funding needs for preventative maintenance for power and water contracted for by the water and power users. We encourage the Subcommittee to request the Bureau to examine its needs for a continuing preventative maintenance program.

Federal Power Marketing Agencies

NRECA supports the $566 million for F.Y. 1987 appropriation request for Federal power marketing agencies. The F.Y. 1988 requests by agencies are: $300 million for the Western Area Power Administration, $27 million for the Southeastern Power Administration, $30 million for the Southwestern Power Administration, and $3 million for the Alaska Power Administration. We also support the Bonneville Power Administration's $206 million budget funded through its self-financing revolving fund procedures. We support similar revolving funds for the other power marketing agencies.

Nuclear Programs

Our association has resolutions supporting nuclear power and nuclear research programs. We request the Subcommittee to provide funds for the F.Y. 1988 budget request of $876.4 million for nuclear programs. Funds are vitally needed to continue development of nuclear technology for improved safety, waste management, enrichment, reactor standardization and other improvements. This advanced technology is essential for continued development and maintenance of a viable nuclear industry and to support the ongoing nuclear power program which provides over 17 percent of our nation's electrical needs. We urge the Subcommittee to provide all the funds requested for the following programs:

- $336.4 million for nuclear energy technology
- $500 million for nuclear waste fund
- $5 millionfor civilian waste research and development
- $35 million for the modular high-temperature gas reactor

Modular High-Temperature Gas Reactor

NRECA continues to strongly support the U.S. program for development of the modular high-temperature gas-cooled reactor. We urge the Subcommittee to fund the F.Y. 1988 program at the GCRA-requested level of $35 million. The reactor is in a size range that offers significant potential for deployment by our cooperatives. The demonstration of Peach

Bottom and Fort St. Vrain, as well as experience with gas reactors in Europe, inspires confidence in the concept. The next generation of nuclear reactors should: (1) be impervious to human error, (2) be incapable of harmful radioactive releases, (3) operate by the laws of nature without the requirement for engineered safety devices, (4) shut themselves down automatically without operator intervention, (5) be incapable of meltdown, and (6) be no danger from them of a chemical explosion or fire. The modular high-temperature gas-cooled reactor appears to fulfill all of these necessary requirements.

Clean Coal Technology

We support the $199.1 million Department of Energy budget request to expand the Clean Coal Technology Program. It will enable the demonstration of technologies which can retrofit, re-power or modernize existing coal facilities. This would allow for further reductions in sulfur dioxide emissions. These emissions are often linked to the acid rain problem and are a major focal point in acid rain control legislative proposals.

I thank the Subcommittee for the opportunity to present this testimony.

STATEMENT OF THE INSTITUTE OF GAS TECHNOLOGY

My name is Bernard S. Lee. I am President of IGT, a not-for-profit energy R&D organization in Chicago. This testimony pertains to FY'88 Appropriations for the Department of Energy non-nuclear programs.

In previous years testifying before Congress, I have pointed to the increasing variety of problems and risks we are taking in our lack of a coherent national energy policy.

I have been alarmed for years at the loss of fine technical and R&D teams caused by the shortsighted approach to alternative energy technology development. Even warnings of a threat to our defense have not brought about a valid energy policy.

Last year, I expressed concern that energy was no longer viewed as an important issue. During the past months, however, I have perceived a changing consensus of opinion in the news media of coming energy crisis.

* The United States currently relies on imports for at least 40% and in the coming energy crisis would likely rely on perhaps as much as 70-75% of its needs, compared with the 33% level of dependence that triggered the first oil crisis in 1973. (The Washington Post.)

* With the relaxation of the once-strong conservation ethic, consumption is growing as fast as 4%-5% per year. (The Next Oil Shock: A Planning Guide for World Energy Markets, 1986-2000.)

* The U.S. lags behind (10th of 21 among IEA nations) in government spending on R,D&D as a percentage of Gross Domestic Product. We are now back at the pre-energy crisis level of response.

* It takes about 3 years for the results of drilling to be reflected in estimates of the reserves base, therefore, it will not be until 1989 that the "true damage" done by the current precipitious drop in drilling activity is documented.

* As a result, the erosion of U.S. exploration and development capability may be so severe that domestic oil production could drop to as little as 6 million bbl/day from the current 8.8 million bbl/day.

* Imports from the Persian Gulf will rise, and a DOD study estimates that the U.S. would need 21.8 million bbl/day in the event of full mobilization in response to a crisis in the Middle East. Even with the Strategic Petroleum Reserve and an increase in Alaskan production we could find ourselves with a shortfall of 50% of that domestic need. Therefore, we are not able to respond to the energy demands of a defense mobilization.

We are suffering from what could be perceived as a pendulum swing in energy policy. The Carter administration reacted to the last energy supply disruption by developing a strategy which called for increased outlays in the fossil energy function of $761.9 millions in FY'82.

The Reagan administration immediately upon taking office called for a revision of the FY'82 budget which requested only $431.1 millions for the fossil energy function. Just as Carter's reaction to OPEC pressure was to pour more money into energy programs, Reagan's reaction to OPEC's fallback has been to eviscerate funding for energy programs - so much so, that the FY'88 budget request for DOE fossil is $168.9 million.

OPEC's loss of control over the oil market was temporary. Just as OPEC discovered the effect of curtailment of supplies had on the demand for their oil at higher prices in 1973, they are now learning that to let us have an extended time of lower priced imported fuel can destroy our own production capability and encourage a decline in conservation practices. The resulting predictable increase in U.S. oil imports has yet to stimulate this administration to establish a long range plan for moderate, but stable funding support for a more balanced federal government's role in energy.

Overcoming serious internal disagreements, OPEC is showing a surprising amount of discipline in implementing the present pricing policy. We should show the same sense of discipline by planning for future curtailments through a solid research program.

Our goal should be to minimize any disruption of our national economy in the wake of an energy crisis. We should be striving for economically secure energy supplies, and encouraging research to make alternate energy supplies economically viable.

IGT continues to believe that there is an appropriate and essential federal role in the direct sponsorship of energy R&D for many of the same reasons often voiced in support of direct federal funding of health, environmental, and defense R&D. In fossil energy research, we believe that direct federal sponsorship should be provided to credible research projects until the research concept reaches sufficient maturity to attract private sector financial participation. In some instances, direct federal sponsorship may be necessary only through proof-of-concept stage, in other instances, such funding may be necessary through scale-credible pilot or demonstration plant facilities. As a research concept approaches technological maturity, a cooperative venture funding mechanism can provide an option to both reduce federal direct funding and test private sector interest in timely cost-sharing further development leading to the marketplace. A sliding-scale of private sector cost-sharing based on the stage of a technology's maturity may well be an effective way to stimulate private sector participation.

IGT is concerned that if the cooperative venture concept - requiring 49% federal/51% private sector co-funding - becomes the only mechanism for federally funding R&D and, hence, is applied across the board to basic research, applied research, and development, then many good research ideas simply will not be pursued. This will result in a grave distortion of the nation's energy R&D program. Not only will few valuable research ideas be funded in tight economic times, but also the diversity of research performers will be lost.

I would encourage you to seek, through disciplined commitment, an overall more stable budgetary and policy grounding for DOE's conservation and renewable energy program. IGT supports the Gas Industry recommendation of a $117.0 million program in FY'88, that better recognizes the role of gas in a more balanced federal energy RD&D program. As part of this program handled by this Subcommittee, IGT has the following recommendations:

BIOFUELS

Single-Stage Pressurized Fluidized-Bed Gasification of RDF

Finding a cost-effective, environmentally-acceptable means for the disposal of municipal wastes is an issue facing most communities today. Currently, such wastes are either landfilled directly, combusted in mass burn facilities, or refined into refuse derived fuel. The availability of landfill areas is rapidly diminishing, so it is becoming increasingly important to reduce the amount of waste which must be disposed of in them. Although mass burning of MSW reduces the amount of solids waste and recovers energy, air pollutants are generated during the combustion process. Therefore, many communities object to the location of mass burn facilities within their boundaries. Refuse derived fuel is sold to utilities for co-firing boilers with coal, however, most existing boilers cannot accept this feedstock and those that do sometimes experience operating problems.

Pressurized gasification of refuse derived fuels or municipal solids waste is an area of waste-to-energy research which can result in a more efficient, environmentally safe process for energy recovery and MSW disposal. IGT has developed the W-GAS process for gasification of refuse derived fuels or municipal solids waste. Preliminary testing has been conducted at 20 atm. in an existing single-stage pressurized fluidized-bed gasifier using pelletized RDF as a feedstock. The existing unit would be used to determine the range of optimum operating conditions for efficient thermal conversion of refuse derived fuel and subsequently municipal solids waste.

IGT recommends $1.5 million for the development of the W-GAS single-stage pressurized, fluidized-bed gasification of refuse derived fuel and/or municipal solids waste.

THERMAL ENERGY STORAGE

There are many industrial operations in which energy is wasted. Recovery and storage of this wasted energy for later use, could result in large energy savings. In an effort to achieve some of these savings, the U.S. Department of Energy has sponsored the development at IGT of an efficient, direct contact, composite thermal energy storage and recovery (TES) material, i.e., CompPhase™.

This CompPhase™ TES technology is the subject of two International Energy Agency (IEA) agreements, the first using TES to reduce energy demand in an industrial process, and the second as a critical item in a high temperature solar thermal electric power generation process.

IGT recommends implementation of the IEA TES agreements by:

- $3.0 million for developing and testing of CompPhase™, including construction of the TES-PDU, and initiation of design and construction of a cost-shared facility at an industrial site, and
- $1.0 million to continue the development of CompPhase™ as a critical component in solar thermal power systems. This medium will be tested in the TES-PDU as well as in the IEA solar power test facility.

GEOPRESSURED METHANE

The United States has thousands of TCF of methane in the ground in the Texas/Louisiana Gulf Coast area in conjunction with geopressurized reservoirs. The U.S. Department of Energy currently has a project underway aimed at solving the technical issues that need to be resolved before cost competitive natural gas can be produced from this resource. This project is using specially drilled geopressured/geothermal wells to combine well testing and scientific data collection and analysis techniques.

IGT recommends $7.8 million to continue the existing contracts and ensure adequate acquisition and analysis of current and historical data and samples from both the Pleasant Bayou and Gladys McCall wells, thus enabling industry to reduce the cost and risk of producing energy from this valuable resource, and to initiate preliminary studies on the Hulin well.

Thank you for this opportunity to present my views to you today. I will be happy to answer any questions you may have.

Selected Energy Research

Recommendations FY'88

PROGRAM FACT SHEET

BIOFUELS

Single-Stage Pressurized Fluidized-Bed Gasification of RDF

Finding a cost-effective, environmentally-acceptable means for the disposal of municipal wastes is an issue facing most communities today. Currently, such wastes are either landfilled directly, combusted in mass burn facilities, or refined into refuse derived fuel. The availability of landfill areas is rapidly diminishing, so it is becoming increasingly important to reduce the amount of waste which must be disposed of in them. Although mass burning of MSW reduces the amount of solids waste and recovers energy, air pollutants are generated during the combustion process. Therefore, many communities object to the location of mass burn facilities within their boundaries. Refuse derived fuel is sold to utilities for co-firing boilers with coal, however, most existing boilers cannot accept this feedstock and those that do sometimes experience operating problems.

Pressurized gasification of refuse derived fuels or municipal solids waste is an area of waste-to-energy research which can result in a more efficient, environmentally safe process for energy recovery and its disposal. The fuel gas produced can be used in existing burner systems and ultimately in combined-cycle power generation systems. Furthermore, complete gasification in a contained system prevents the release of airborne pollutants. IGT has developed the W-GAS process for gasification of refuse derived fuels or municipal solids waste. Preliminary testing has been conducted at 20 atm. in an existing single-stage pressurized fluidized-bed gasifier using pelletized RDF as a feedstock. IGT recommends a research program utilizing the existing one-foot diameter pressurized fluidized-bed gasifier in Chicago, Illinois to determine the potential for gasification of refuse-derived fuel. The existing unit would be used to determine the range of optimum operating conditions for efficient thermal conversion of refuse derived fuel (and subsequently municipal solids waste).

The proper feeder design for refuse derived fuel and/or municipal solids waste will also be evaluated. Geometric factors such as fuel input and discharge points, gas distribution and the ratio of bed depth to bed diameter will also be evaluated. The discharge streams will be analyzed for potential pollutants, and gas cleanup processes, if determined to be necessary, will be investigated.

An existing 3-foot diameter sloping-grid gasifier will be used to perform extended duration tests and to evaluate the selective removal of inorganic materials which will be present in RDF and MSW. Detailed process and environmental data will be acquired and a conceptual plant design and cost estimate, and preliminary economic analysis will be performed.

IGT recommends $1.5 million for the development of the W-GAS single-stage pressurized, fluidized-bed gasification of refuse derived fuel and/or municipal solids waste.

THERMAL ENERGY STORAGE

There are many industrial operations in which energy is wasted. Recovery and storage of this wasted energy for later use, could result in large energy savings. In an effort to achieve some of these savings, the U.S. Department of Energy has sponsored the development at IGT of an efficient, direct contact, composite thermal energy storage and recovery (TES) material, i.e., CompPhase™.

This CompPhase™ TES technology is the subject of two International Energy Agency (IEA) agreements, the first using TES to reduce energy demand in an industrial process, and the second as a critical item in a high temperature solar thermal electric power generation process.

In the industrial IEA agreement, the U.S. government has responsibility for the development and pilot-scale testing of the composite latent heat TES medium; and design, installation, instrumentation, and operation of a full-scale field test in the U.S. brick/ceramic industry. It is expected that use of this TES technology in a typical brick plant with periodic kilns will result in a 25% energy savings. The IEA agreement for the development of advanced, high temperature composite TES systems for solar thermal power applications involves the development and fabrication of first and second generation CompPhase™ materials as well as, testing of the technology in a PDU in the U.S. and in the IEA solar test facility. The current IEA solar thermal power plant design includes high storage-density, high temperature TES systems as vital components to the technical and economic viability of the electric power generation process.

IGT recommends implementation of the IEA TES agreements by:

* $3.0 million for developing and testing of CompPhase™, including construction of the TES-PDU, and initiation of design and construction of a cost-shared facility at an industrial site, and

* $1.0 million to continue the development of CompPhase™ as a critical component in solar thermal power systems. This medium will be tested in the TES-PDU as well as in the IEA solar power test facility.

GEOPRESSURED METHANE

The United States has thousands of TCF of methane in the ground in the Texas/Louisiana Gulf Coast area in conjunction with geopressured reservoirs. The U.S. Department of Energy currently has a project underway aimed at solving the technical issues that need to be resolved before cost competitive natural gas can be produced from this resource. This project is using specially drilled geopressured/geothermal wells to combine well testing and scientific data collection and analysis techniques to remove the uncertainties regarding:

- the quantity of hydrocarbons produced with the brine,

- the thermal and hydraulic energy content of the produced brine, and

- the best methods of producing electricity from both the hydrocarbon and the energy content of the produced brine.

IGT recommends $7.8 million to continue the existing contracts for operation, data acquisition and analysis from the Pleasant Bayou and Gladys McCall wells to enable industry to reduce the cost and risk of producing methane from this valuable resource, and to initiate preliminary studies on the Hulin well.

STATEMENT OF ROBERT L. REID, PROFESSOR AND CHAIRMAN, MECHANICAL AND INDUSTRIAL ENGINEERING DEPARTMENT, UNIVERSITY OF TEXAS AT EL PASO

ABSTRACT

Solar ponds are a promising alternative energy option to supply low cost thermal and electric energy and desalination. Several experimental solar ponds exist in the U.S. in the range of 150 m^2 to 4000 m^2 and the second largest solar pond (3500 m^2) has been constructed and operated by U.T. El Paso in El Paso. Israel has made a much greater commitment to solar ponds with a 250,000 m^2 (60 acre) solar pond currently producing 5 megawatts of electric power. This type of low cost energy is badly needed in the United States with examples being electricity for remote power and peak load reduction, desalination of brackish ground and well water, and the control of salt contamination in the rivers in the western U.S. The El Paso Solar Pond was the first in the U.S. to generate electricity and would be the first in the world to power a desalination system. Funding appropriations should be continued for this project.

INTRODUCTION

Most alternative energy systems developed in the United States have delivered significant quantities of energy but not at prices competitive with conventional fuels. One solar energy option that has attracted interest in the U.S. in the past five years is the salt-gradient solar pond which may provide energy at one-tenth the cost cf other alternative energy options. Salt-gradient solar ponds are particularly attractive in the Southwest U.S. because of the abundance of solar radiation and ready availability of salt. Israel is convinced of their value and has made major commitments to their solar ponds including the construction of a 250,000 m^2 (60 acre) solar pond at Beit Ha'Arava on the shore of the Dead Sea which currently generates 5 MW of electric power.

When solar radiation penetrates into a body of water and heating occurs, the more buoyant hot water rises to the surface and most of the heat is lost by convection to the atmosphere. The concept of a solar pond is to saturate the bottom part of the thickness of water with a soluble salt, normally commonly available sodium chloride. A salt gradient is established in the upper part of the pond to create a stagnant solution which significantly lowers heat losses. A thin upper layer of low salt concentration becomes mixed by wind effects. The upper mixed zone is typically 30 cm (1 ft) thick, the gradient zone is 120 cm (4 ft) thick and the lower zone can be from 1 to 7 m (3 to 21 ft) in thickness. The brine in the lower zone is heated by solar radiation penetrating through the upper two zones and the brine will boil if heat is not removed from the lower zone. The lower zone is also called the storage zone because, unlike all other alternative energy systems, solar ponds are naturally equipped with large amounts of thermal storage.

Energy is extracted from the storage zone by carefully pumping the brine to an external heat exchanger and then returning the cooler brine to a different part of the same zone. In the heat exchanger, thermal energy can be supplied by heating water to temperatures up to 90°C (194°F) for residential, agricultural, or industrial process heat. Another option is to have the exchanger be a part of a heat engine operating with a low boiling point fluid (such as Freon in a Rankine cycle engine-generator) to produce electricity. The storage capability of the solar pond is particularly important in electricity production because large amounts of electricity can be produced during peak demand hours to substantially reduce demand charges for commercial customers, thus multiplying the dollar savings of the solar pond. A recent feasibility study for a food processing plant in El Paso showed a three year payback for the supply of thermal energy and a six year payback for electricity supply with the pond operated to reduce peak demand.

There is a great need and opportunity for salt-gradient solar ponds in the U.S. One example is for the supply of electric energy for pumping water in remote locations. Another example application would be in the Red River drainage basin of north Texas. Approximately 4900 metric tons of salt are introduced into this basin daily from natural salt deposits that underlie the area making much of the water unfit for agricultural or municipal use. The U.S. Army Corps of Engineers had decided to construct six solar ponds with a total area of 63.1 ha (158 acres) with the extracted energy to provide the pumping needs for the salt chloride control project; a change in federal policy put the project on hold. The Corps of Engnineers still is vitally interested in solar ponds as evidenced by the recent funding to the U.T. El Paso solar pond group of a contract for a feasibility study for a large solar pond at Yuma, Arizona. Another particularly suitable application is in southeast Texas area where large brine pits used to displace petroleum stored in underground salt cavities can be transformed into solar ponds. Another study for Fort Worth, Texas revealed that solar ponds were feasible for district heating and cooling (by the absorption cycle) for 50 unit housing communities. Many other applications are also attractive in the U.S.

The thermal and electric energy from a solar pond can also be used to power a low temperature distillation unit that can produce potable water from brackish well water by using heat to boil the water and electricity to run vacuum pumps in a multi-stage unit at consecutively lower pressures. This process has been studied on paper but never demonstrated experimentally.

The U. T. El Paso Solar Pond

The U.T. El Paso Solar Pond Project was started in 1983 by a cooperative effort involving several organizations including the U.S. Bureau of Reclamation, the Texas Energy and Natural Resources Advisory Council (TENRAC), and the El Paso Electric Company to take advantage of a particular favorable application and site at the Ashley's Division of Bruce Foods Corporation in El Paso. They had a 3355 m^2 (36,000 ft^2) pond which had been used several years earlier, by a previous occupant of the plant for fire protection, before a city water line was subsequently extended to the plant. Because of limited funding, made worse by the demise of TENRAC and deteriorating economic conditions at El Paso Electric causing withdrawal of their modest support, this project proceeded slower than desired. The conversion of the water storage pond to a solar pond was completed in late 1984 and in the summer of 1985, the pond was operated at 72°C (162°F) and became the first to supply process heat. During the summer of 1986, the solar pond was operated at 85°C (185°F) and between July 15 - September 15, 350 x 10^6 kJ (332 x 10^6 BTU) were delivered as boiler feedwater to the food plant.

A 100 kW organic Rankine cycle engine-generator was delivered to the project site in late July, 1986. On September 19, with the pond at 85°C, electricity was first generated by a solar pond in the United States. Since the pond power system is connected within the property of Bruce Foods, they receive full value of the electricity generated, unless the power output were to exceed the requirements of the factory at a particular time. This situation will not occur because of the flexibility of total control of the time at which electricity will be generated. This ability to deliver energy on demand is one of the principal advantages of solar ponds over wind turbines and photovoltaic cells. Substantial dollar savings have been predicted because of the ability to reduce electric demand charges at the company.

As of November 31, 1986, 2,125 kWhr of electric energy had been generated. On October 15, a dedication and demonstration ceremony was held at the site with high level representatives from the University of Texas at El Paso, the U.S. Bureau of Reclamation, El Paso Electric, and Bruce Foods Corporation each making a presentation. Local television and newspaper coverage as well as a nationally published Associate Press news article produced over 150 phone calls and letters from 33 states.

Electricity continued to be generated throughout the entire winter of 1986-87 with the pond reaching a minimum temperature of 69°C (156°F) in mid-January, 1987. By careful monitoring of the temperature and salinity profiles and using a stability analysis program developed at U.T. El Paso, no stability problems have developed. From the stability analysis, decisions were made as to pond operation during indicated time periods and on a few occasions during the winter, some saline water was moved from the gradient zone into the lower storage zone. At the present time, knowledgable personnel are needed to monitor and successfully maintain a salt-gradient solar pond.

Because of the success with the project during 1986, it is planned to operate the solar pond at 95°C (203°F) during the summer of 1987. In summer, 1987, a 25 stage, falling film, low temperature desalination unit is expected to be delivered and installed at the site. The unit will be powered by thermal and electric energy from the solar pond to produce 19,000 liters/day (5000 gal/day) of drinking water from brackish water. The unit should be operational during the fall of 1987 and the U.T. El Paso Solar Pond will become the first solar pond in the world to desalinate water.

The University of Texas at El Paso

Mechanical & Industrial Engineering Department

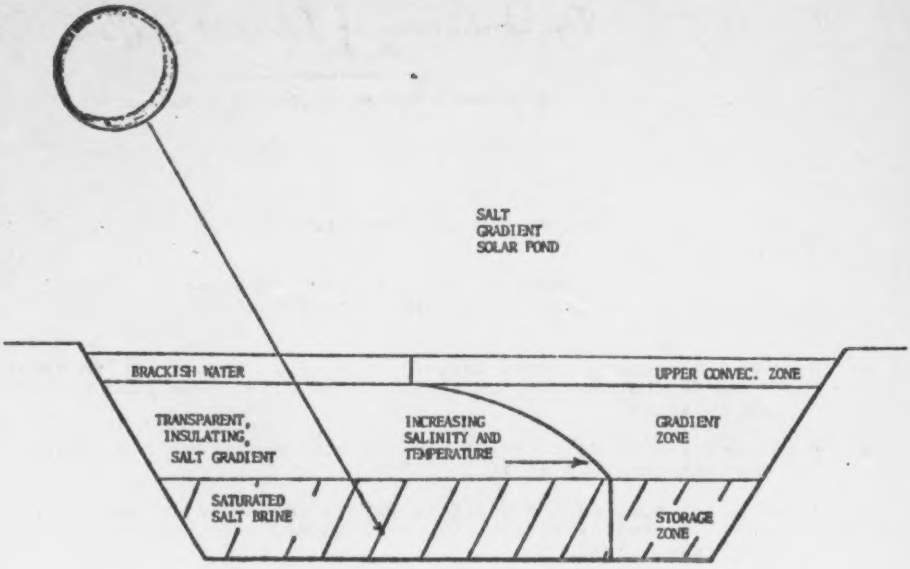
El Paso Solar Pond Project

Dr. Robert L. Reid, Project Manager
Dr. Andrew H. P. Swift, Chief Engineer

- Area = 0.83 acre - second largest in U. S., largest is TVA solar pond in Chattanooga, TN at 1.0 acre area. One pond in Israel is 60 acres.
- Pond operates at 85°C (185°F) in the bottom storage zone while the surface layer is at 10°C (50°F).
- First solar pond in the world to supply industrial process heat (1985). Approximately 400 million BTU delivered during July-September, 1986.
- First solar pond in the U. S. to generate electricity, September 19, 1986. Has reached 70 kilowatts peak output - capable of reaching 100 kW. Only other solar ponds producing electricity are in Israel, 5,000 kilowatts and Australia, 20 kilowatts. Approximately 2500 kWhr of electricity delivered as of December 1, 1986.
- Solar pond constructed and operated by U. T. El Paso with funding and help from:

  U. S. Bureau of Reclamation
  El Paso Electric Company
  Bruce Foods Corporation
  Texas Energy and Natural Resources Advisory Council (TENRAC)

- Future plans - In 1987, the El Paso Solar Pond will become the first solar pond in the U. S. and possibly the world to produce drinking water from brackish (salty) well water by using the thermal and electric energy from the pond to power a low temperature desalination unit to produce 5,000 gallons per day of drinking water.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UPPER CONVEC. ZONE
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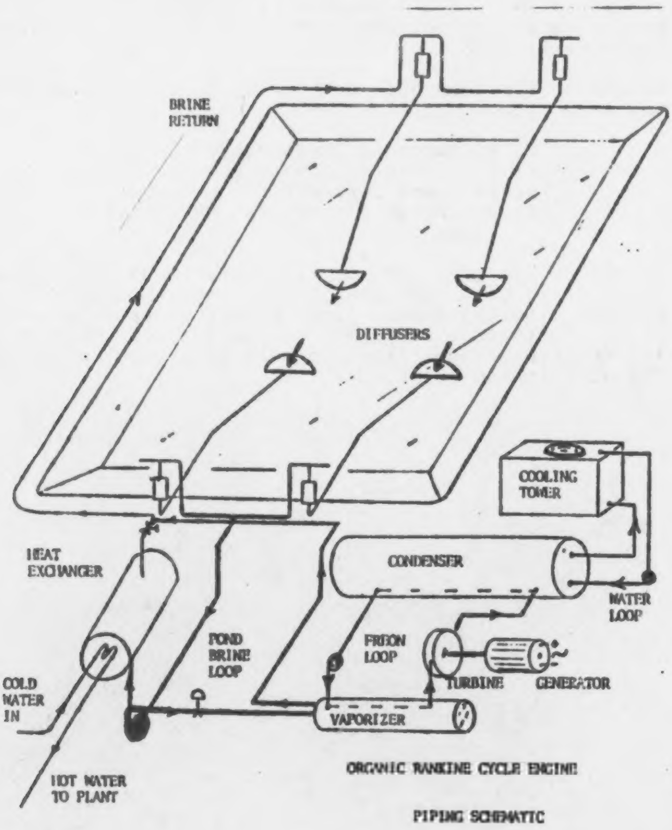
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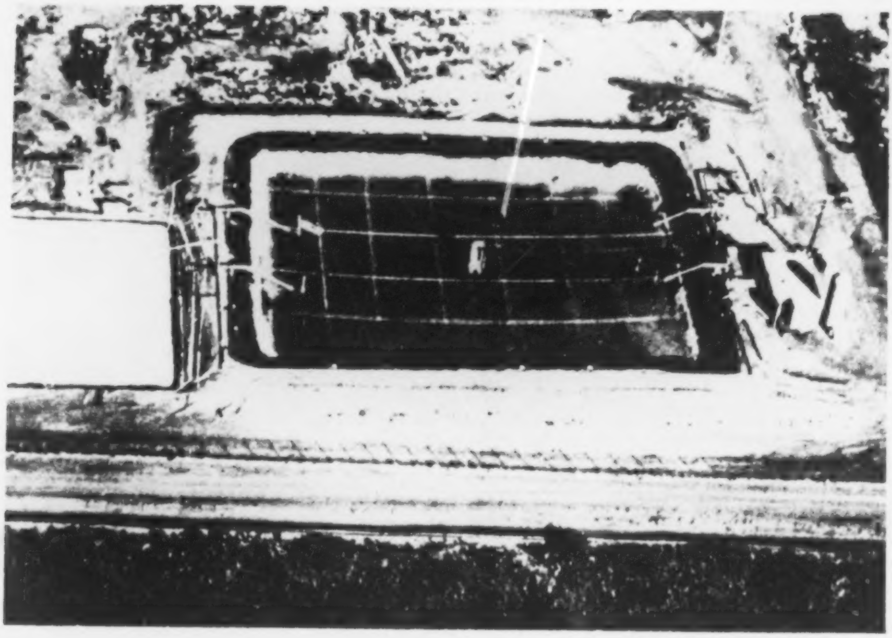
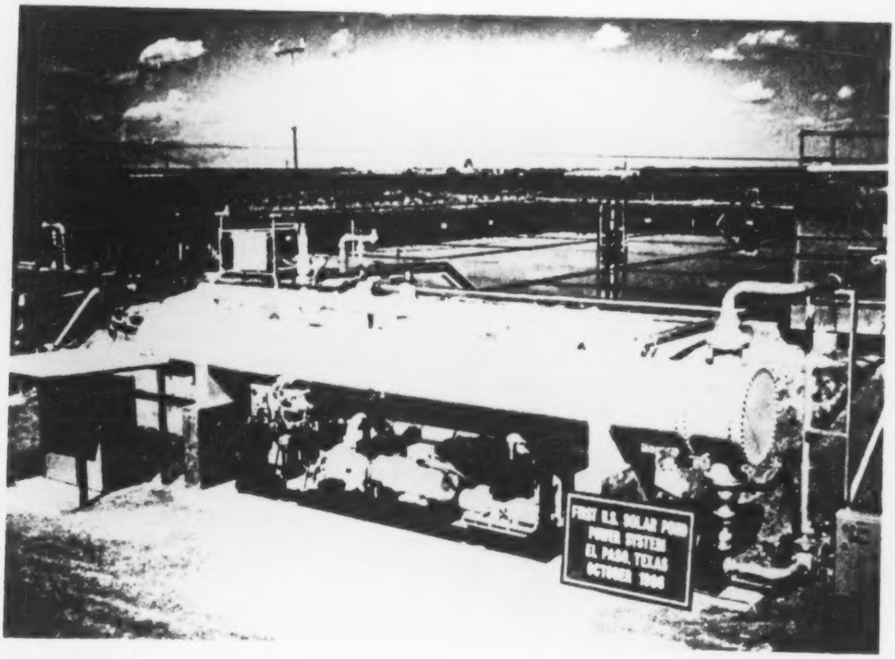




FIRST U.S. SOLAR POND
POWER SYSTEM
EL PASO, TEXAS
OCTOBER 1986

Statement of GA Technologies, Inc.

I am Linden Blue, Vice Chairman of the Board of GA Technologies, and I am pleased to have the opportunity of appearing before you today to discuss some of GA's research and our recommendations for the FY'88 budget.

	FY '88 Recommendation
o Modular High Temperature Gas-Cooled Reactor	$35M
o Magnetic Fusion Development	$370.5M
o Thermionics Development	$9M
o HTGR Licensing Review Activities (NRC)	$1M

Each of these activities offers significant benefit to the U.S.

Modular High Temperature Gas-Cooled Reactor

The ModularHTGR power system represents an historic opportunity for the world to avoid escalating energy costs with complete safety and without environmental degradation. It provides an opportunity for the United States to break its nuclear energy log jam, to help assure our energy security and independence, and to be the world leader in a new technology that can dramatically improve our balance of payments. This new technology is a power source which is both inherently safe and economically competitive.

This system derives its safety and economy from simplicity and a minimal need for expensive engineered safety apparatuses. The core size, core power level, core geometry, surrounding reflectors and pressure vessel were selected such that passive cooling mechanisms alone insure that the radionuclides will be retained within the fuel particle for all credible accident conditions. The ModularHTGR, therefore, eliminates the need for evacuation or sheltering of the public, as well as protecting the investment of the power plant owner. The ModularHTGR takes full advantage of proven learning curve economies rather than the elusive economies of scale. The low enriched, once-through (non-recycle) fuel eliminates proliferation concerns in the international market.

When the ModularHTGR development is completed, it will catalyze an expanded indigenous energy supply in the U.S., as well as provide a very attractive product for export. To facilitate commercialization, GA has efforts underway to establish a joint venture ModularHTGR vendor entity which will be able to supply ModularHTGRs for the U.S. and world markets. World markets for electrical generating facilities will exceed $200 billion annually by the year 2000, with almost 75% being outside the U.S. The development of the ModularHTGR could be critical to our ability to participate in this vast market and to be able to influence international industrial nuclear policy.

Industry is prepared to shoulder the commercial and performance risk of the ModularHTGR as soon as governmental support brings the program to a point that the regulatory and policy risks induced by the public sector are behind us. My discussions with component vendors, architect-engineers, and electric utilities have convinced me of the industry's need and strong desire for such a product. These suppliers and users will insure commercial deployment once those obstacles, which cannot be attenuated by good management and quality products, have been surmounted.

Government must provide leadership and a portion of the early front-end support to assure continued development. Normally, when a market need occurs, particularly one of this size, and a good product is offered, industry is prepared to invest to make it happen. However, in the nuclear power market, commercial financing support has collapsed. Three Mile Island, Chernobyl, 15-year construction schedules, changes in licensing requirements, interventions, bad management -- all have contributed. Even though the ModularHTGR addresses all these risks, the public acceptability of commercial nuclear power has to be re-established. The political and regulatory risks have to be stabilized. Once the ModularHTGR has its licensability and related costs quantified, private industry will assume its traditional role.

To date, the conceptual design of the ModularHTGR has been a very successful, very cost-effective, government/industry collaboration. During 1986 the program participants completed 140 DOE contract milestones on schedule and within budget. The Preliminary Safety Information Document (PSID), Regulatory Technology Development Plan (RTDP), and the Probablistic Risk Assessment (PRA) have been submitted to NRC. These documents provide a compelling basis upon which NRC can issue a positive licensability statement in January of 1988.

All of us are aware of the very productive public/private collaboration which has allowed Japan to become a major industrial power and exporter. The Japanese applied $30 million to HTGR work last year. The German government and vendors are marketing HTGR's worldwide. They spent over $100 million on development and marketing activities last year. The ModularHTGR can compete internationally only with similar collaboration between the U.S. government and industry.

For FY'88, the ModularHTGR needs a budget sufficient to support the licensability effort, to continue the technology development work at the national laboratories, and to make a solid start on the preliminary design. These activities will require about $35 million. This level of funding will allow for real technical and licensing progress and to continue development of this breakthrough in nuclear power safety.

It is also critical that the NRC be adequately funded to complete their licensability assessment. During FY'88, they will be reviewing the PSID, RTDP, PRA, and the Emergency Planning Basis for the ModularHTGR. In addition, an innovative licensing approach has been submitted for consideration. I recommend that NRC be funded for $1 million to complete their evaluations of the ModularHTGR on a timely basis.

Fusion Power

The President's budget request of $345.6 million seriously constrains the development of fusion science and related technologies. The program is at the point where two major thrusts should be pursued - namely, maximize the fusion physics that can be learned from the existing devices, and initiate construction of an ignition device, for operation in the early 1990's. Unfortunately, the present budget does not provide enough funds to pursue these thrusts in a timely and cost-effective manner. We therefore recommend that the FY 1988 budget be increased by at least $25 million over the President's request, for the following purposes:

- To provide an additional $15 million for research and construction of the Compact Ignition Tokamak (CIT); and
- to provide at least $10 million additional funding for operations on existing devices.

The $16 million identified in the budget request for CIT research and development, design, and start of construction is insufficient for the timely and cost-effective construction and operation of the device. We recommend an increase of $15 million for the FY 1988 CIT program. Starting this important project implies a commitment to provide additional funds in subsequent years so the device can be constructed and operated in a timely fashion. In our view, this can only be done by increasing the total Magnetic Fusion Energy budget; trying to carry out the project on level funding would prevent timely construction of the device and would seriously impair the supporting theoretical and experimental research efforts at existing facilities.

Secondly, at the present budget levels, there are insufficient operating funds to allow the existing devices to run experiments at their full levels of performance and availabilty. We are recommending that $10 million of the $25 million increase be applied to permit full operation of DIII-D and other fusion devices, and to continue operations on the OHTE device at GA. This alternative fusion device was built with private funds and has already made substantial contributions to DOE's reversed field pinch program.

The DIII-D experimental time is currently about one-half of what could be with sufficient operating funds. Even the present level of operation would not be possible if Congress had not provided additional funding in FY 1987. A doubling of experimental time would yield important and timely new information on confinement physics and technology issues relevant to the designs of CIT and the Engineering Test Reactor (ETR). In view of the several hundred million dollar investment that has been made in the DIII-D facility, we strongly believe that modest additional funds should be provided to enable full-time operations.

It is extremely important to the national program that DIII-D operate at its full experimental capability. Over the last year, DIII-D realized excellent plasma performance and was the first of the large international tokamaks to obtain the so-called "H-mode," a regime of improved energy confinement. The DIII-D device is similar in size and shape to CIT and is testing the efficiency of plasma heating concepts currently under considration for CIT and ETR. These inherent features, plus the capability to test the limits of the key plasma parameter beta, make the DIII-D device the testbed for exploring and verifying the physics design of both the Compact Ignition Tokamak and the Engineering Test Reactor.

The DIII-D program is an international cooperative effort of the U.S. Department of Energy, the Japan Atomic Energy Research Institute and GA. The present agreement continues into August of next year, and discussions are underway to extend the cooperation to 1992. The Japanese have contributed to the DIII-D program in a major way in both funding and scientific talent. Since DIII-D is operated under an international cooperative agreement, the parties to the agreement need to uphold their commitments by operating the device at its intended level.

The importance of upholding commitments will certainly become a key issue in the discussions and negotiations for international collaboration on the proposed Engineering Test Reactor. The U.S./Japan cooperation on DIII-D has been the largest U.S. involvement to date in an international fusion research program. The example we set on this cooperative effort will clearly influence our negotiating position on the ETR collaboration. The U.S. role in the ETR should ensure continued U.S. leadership in the international fusion effort. We must not lose technical responsibility in any of the research areas that are critical to the fusion energy option.

Thermionic Space Power Systems

GA is also developing thermionic technology for space electrical power for civil and military missions. Its unique characteristics for space applications include:

- The same technology can provide power at a few kilowatts as well as at many megawatts.
- Thermionic power systems have a low mass and volume, and are highly survivable.
- Static power conversion results in a highly reliable system.

The central focus of the current effort on thermionic power conversion is the 4-year Thermionic Fuel Element Verification Program, now in its second year. Thermionics is recognized by DOE, NASA and the USAF as the preferred technology for high power missions. The TFE Verification Program was established to demonstrate that thermionic power converters have a lifetime of at least 7 years. The technology demonstrated would be applicable for power requirements between 500 kW(e) and 5000 kW(e). With appropriate support, it will be available when needed for such missions as air-traffic control, surveillance, advanced space stations, electric propulsion, and the emerging military missions.

The TFE Verification Program is producing results: components are under irradiation in the TRIGA reactor at GA and in the Fast Flux Test Facility at Hanford; component testing will begin in the EBR-II in the early summer; component integration testing will begin this fall in the TRIGA. 1988 will mark the midpoint of the program with additional tests beginning in all three test reactors. Results to date are favorable and confirm earlier model predictions.

One important thermionics application is the STAR-C program for power in the range of 1 to 40 KW(e). Existing missions such as the Boost Surveillance and Tracking System and Milstar require power in this range, and other surveillance missions are emerging. The reactor core is uranium and graphite and is based on fuel developed for the NERVA and HTGR reactors. The thermionic converters, located at the core-reflector interface, are those developed for the Solar Electric Thermionic Program. STAR-C is a small compact system with no coolant, pumps, valves or rotating machinery, ideal for the many surveillance and communications missions being implemented. The fact that the STAR-C fuel and power converters are based on proven components means that the development program for a flight unit can be both fast track and relatively inexpensive. A product development program of about $200 million will deliver 2 qualified flight units in 5 years.

A third thermionics program is the THOR concept development effort for providing multimegawatts of burst power in a closed cycle mode. In THOR, hundreds of megawatts are generated for hundreds of seconds by thermionic power converters, with waste heat being stored in a thermal energy storage material. When the storage medium reaches capacity, power production must cease and the stored heat rejected to space. THOR has applications for very high power SDI missions.

GA recommends that the DOE funding request of $5 million for FY'88 for thermionics be increased to $9 million. This higher level is required to return the TFE Verification Program to its original four-year schedule to provide performance and lifetime data. The TFE Verification Program which provides the basic technology for all application programs will require $7.5 million of the $9 million in FY'88 to compensate for the reduction which occurred this past year. The remaining $1.5 million will support the generic thermionic technology. Thermionics is the preferred technology for high power missions. It is therefore particularly important to keep it moving at the required pace.

Summary

GA is pleased to be a contributor to these three programs. The ModularHTGR will provide safe, cost effective electrical power for public and industrial use beginning in the mid-1990's. Thermionic space power will provide electric power in space to power civilian and military satellites in approximately the same time frame. In the longer term, fusion technology holds the potential to provide massive amounts of inexhaustible energy which the U.S. and the world will eventually require.

Mr. Chairman, I appreciate the opportunity to describe these challenging, high payback programs to you and the members of the committee.

STATEMENT OF ROBERT L. MCCRORY, DIRECTOR, LABORATORY FOR LASER ENERGETICS, UNIVERSITY OF ROCHESTER

Summary

The University of Rochester's Laboratory for Laser Energetics (LLE) mission is to support the National Inertial Confinement Fusion (ICF) program to demonstrate the scientific feasibility of direct-drive laser fusion. ICF addresses many critical nuclear weapons physics issues in a regime where the small sizes, driver energies available, extremely short time scales, and high compressions necessitates a precise quantitative understanding. The inertial fusion program could be critically important to the Nation if a very limited or comprehensive nuclear test ban were to occur. As part of this effort, LLE experiments address a number of critical weapons physics issues identified and assigned to LLE in the DOE–ICF five year plan, and has been instrumental in attracting talented people into the weapons effort. The LLE is the only major unclassified ICF facility in the United States. Additionally, according to the National Academy of Sciences (NAS) Review[1] of the Department of Energy's Inertial Fusion Program published in March 1986, the LLE serves as a window to the greater scientific community, as a training ground for students and researchers, and as the focus of a user facility (the National Laser Users Facility, NLUF) for applications ranging from x–ray microscopy and basic plasma physics to x–ray laser research.

LLE is the national focal point for direct-drive laser fusion compression experiments. The near-term objective of the LLE program is to achieve high density compressions of thermonuclear fuel in short-wavelength direct drive experiments. The NAS report supports a 30 kJ upgrade of the OMEGA laser for the purpose of demonstrating significant burn via direct drive should a high compression milestone be achieved. To continue its mission to demonstrate the feasibility of laser fusion and in concert with recommendations of the NAS panel, LLE is requesting a total authorization and appropriation of $12,400,000 for FY88. Of this amount, $8,400,000 is required for continued level-of-effort research operations. The additional $4,000,000 is requested to fund the design engineering and development of the upgrade to the Omega laser facility to enable it to carry out direct-drive implosion experiments at or slightly below the ignition regime. These additional funds would provide the information required for the DOE to reach a decision on the upgrade recommended by the NAS panel to be made during FY 88. Continued operation of the NLUF requires an additional budget of $625,000 in FY 88 to support new experiments approved and recommended for funding by the NLUF Steering Committee.

Background

The University of Rochester has been involved in fusion research since the late 1960's. The Laboratory for Laser Energetics was established in 1970 as a center for the investigation of intense radiation with matter and has pursued an expanded research program in conjunction with industry since 1972. The primary mission of the Laboratory is to demonstrate the feasibility of inertial confinement fusion.

In the early 1970's, the University funded the fusion research effort almost exclusively through its industrial sponsors. As the program evolved from a bench-scale effort to a laboratory scale, the University elected to meet a national goal of laser fusion feasibility research using the joint support of the Federal Government, industry, utilities, the State of New York, and the University of Rochester. Approximately $140,000,000 have been invested in the program since 1972. Approximately 36% of the total has come from non-federal sources. LLE is the only ICF program participant which continues to have significant amounts of non-federal support through the Laser Fusion Feasibility Project at the University which includes the following sponsors: Empire State Electric Energy Research Corporation, General Electric Company, New York State Energy Research and Development Authority, Ontario Hydro, Southern California Edison Company, and the University of Rochester. In effect, at Rochester a new and different kind of "national laboratory" has been created.

The Laboratory conducts basic physics experiments and research in support of the national short-wavelength laser program; provides graduate and undergraduate training in electro-optics, high-power lasers, high-energy-density physics, plasma physics, and nuclear fusion technology; operates the National Laser Users Facility; and conducts research in advanced technology areas related to high-energy-density phenomena. This multi faceted role supports the research interests of the nuclear weapons program as well as energy programs.

The Laboratory for Laser Energetics collaborates with institutions such as the University of Wisconsin, the Naval Research Laboratory, KMS Fusion, Inc., the Los Alamos National Laboratory, and the Lawrence Livermore National Laboratory on various aspects of laser fusion. A collaboration with the University of Wisconsin, for example, has produced a conceptual direct-drive fusion reactor. The reactor, named SIRIUS, after the brightest star in our sky, features a number of innovations including a dry wall of silicon carbide to reduce the neutron activation problem in fusion reactors. Collaborative experiments with Los Alamos have the objective of examining some of the key scientific issues important to laser fusion and common to both glass- and gas-laser matter interactions. KMS Fusion, Inc. provides many of the fusion targets used in Rochester's experiments, and KMS has recently delivered a cryogenic target assembly to Rochester to be used in high compression direct drive compression experiments.

Program Strategy

The near-term objective of the U.S. inertial fusion program is to demonstrate the feasibility of burning small masses of thermonuclear fuel using lasers or particle beams. An understanding of the physics of marginal fuel thermonuclear burn is essential to a number of Defense Programs' weapons issues. Once the scientific feasibility of inertial fusion is established, ICF will serve both the nuclear weapons research and development effort and civilian needs. When sufficient ICF yields are achieved, a laboratory ICF facility will address many weapons issues not presently addressable at all, as well as replace some research which now must be addressed in underground nuclear tests. A civilian long term goal of ICF is to provide a cost-effective, safe inexhaustible source of commercial power. One need not draw the distinction between the civilian and military programs until scientific feasibility of the process is established. The National ICF Program is addressing many short term issues for military programs at the National Laboratories and support laboratories such as Rochester's LLE.

There are two principal approaches to inertial confinement fusion: direct and indirect drive. In the indirect or "hohlraum" approach to fusion, the principal approach in the United States, the driver-beam energy is absorbed and converted to x-rays by a case made of a high atomic weight element, the x rays are then used to drive the target implosion. In the alternative, direct-drive approach, a short-wavelength, high-intensity laser pulse directly illuminates a bare, spherical target. Since no intermediate conversion process is required for the direct-drive approach, it is potentially more energy efficient than the hohlraum approach.

LLE is the only ICF participant with the primary role of conducting direct drive compression experiments.

The key requirement for the inertial fusion process to produce high gain is the simultaneous achievement of high density and high temperature. To maximize the energy gain from an inertial fusion reaction, all of the DT fuel should be compressed to a high density, but, it is only required to simultaneously heat and compress a small fraction of the total fuel mass. Once ignition of this "hot spot" occurs, the resulting high energy thermonuclear reaction products (neutrons and alpha particles) redeposit their energy in the cold, dense fuel and initiate a thermonuclear burn wave. The achievement of thermonuclear ignition in a small fuel core with modest laser energy is the single most important near-term milestone in laser-fusion research.

LLE Program Accomplishments

The National Academy report has cited LLE for a number of accomplishments, key among them, the **"investigation and demonstration of high efficiency frequency multiplication which now forms the basis of all the world's glass laser programs, and is certainly a major cause of the present upswing in ICF technical results and prospects."** With efficient frequency conversion techniques, short wavelength-laser-matter interaction experiments have now demonstrated efficient coupling of the laser energy to the target with minimal preheat. Progress towards demonstrating the feasibility of ICF has been rapid since the problem of fast electron generation was overcome with short-wavelength lasers:[2] Experiments on the NOVETTE laser at Lawrence Livermore National Laboratory demonstrated densities in excess of 20 g/cm^3 (100 times the density of liquid deuterium-tritium fuel). Ultra-high pressure implosions (greater than ten billion atmospheres) were achieved by the NOVA laser in radiation-drive mode with an energy of 20,000 Joules and with the University of Rochester's Laboratory for Laser Energetics (LLE) OMEGA laser using 2,000 Joules in direct-drive mode. Significant advances towards producing the drive uniformity required for direct-drive targets have been made at the Naval Research Laboratory and at LLE. Advanced laser concepts for future fusion lasers are now under development including the excimer KrF gas laser (operating at a wavelength of 0.25 μm), being developed at the Los Alamos National Laboratory.

The OMEGA glass laser system at LLE was fully converted to ultraviolet operation in 1985. OMEGA is currently capable of 2,500 Joule operation at 351 nm. Because the energy requirement for direct-drive experiments is substantially less than that required for indirect drive, OMEGA experiments can investigate the target physics implosion issues central to the national program effort to create the conditions required for high gain target performance in the laboratory.

The conversion of OMEGA to the ultraviolet has resulted in a unique experimental facility for the investigation of spherically symmetrical implosion experiments. The short-term objective of the LLE program is to demonstrate drive uniformity with the OMEGA system sufficient to achieve high compressions of thermonuclear fuel. Densities up to 100 times solid should be achieved on OMEGA in experiments in FY 87, and after improvements in the illumination uniformity and installation of a cryogenic capability developed by KMS Fusion, experiments should yield compressed fuel densities in the range of several hundred times solid density in FY 88.

The NAS report identified 12 key issues for ICF. Of these 12, LLE is addressing ten of them: finding the minimum drive energy required for ignition and high gain; understanding plasma instabilities in laser-matter interactions at short wavelengths; investigating the efficiency of x–ray generation; understanding the hydrodynamic stability limits of laser-driven implosions; determining target fabrication requirements for laser-fusion targets; demonstrating symmetry of drive required for high compression; understanding the physics of central ignition; exploring the capabilities of direct drive for laser-fusion feasibility; developing target diagnostic instrumentation; and contributing to the development of advanced optical materials for driver technology.

In addition to the favorable absorption scaling and absence of hot electron generation due to short wavelength lasers, collaborative experiments between LLE and the Los Alamos National Laboratory have confirmed the high efficiency for the conversion of laser light to x–rays. In collaboration with the University of Wisconsin and NRL, LLE conducted a study of critical issues related to the design of an ICF materials test facility. The work indicates a symmetrically-illuminated target facility could provide the necessary critical data and technology base for an ICF demonstration facility. In a collaborative experimental program with Lawrence Livermore National Laboratory, new nuclear activation diagnostic techniques were developed.

Direct-drive implosion experiments at Rochester in 1985 achieved record thermonuclear yields. Over 1500 OMEGA systems shots were used for research in 1986. In the last two years a number of important high-density plasma diagnostic techniques were developed at LLE including: high sensitivity and high resolution time-resolved x–ray spectroscopy, nuclear fuel activation, and two-dimensional monochromatic x–ray imaging. In 1985-86, LLE scientists authored 275 publications and papers.

LLE has met every laser-fusion program milestone to date in a program of research for direct-drive ultraviolet laser fusion originally formulated in 1981. The collaborative experiments with NRL, LANL, and LLNL have led to a number of important ICF results. In addition to LLE researchers, over 20 faculty members from the University of Rochester's River Campus are involved with the 72 students currently working at LLE.

LLE has also compiled a record of accomplishments in other advanced technology research. LLE has a number of SDI contracts in x–ray and γ–ray laser research, high power switching and ultrafast opto-electronic research. The Air Force Ultrafast Science Center was established at LLE in 1986 to bridge the gap between high-speed electronics and ultrafast optics by providing education, research, and development in areas critical to future communications and high-speed computer systems. LLE scientists characterized the fastest room-temperature transistor, developed noncontact high-speed device characterization methods, developed a superconducting transmission line to extend the propagation distance of high-speed electrical signals, measured nonequilibrium heating and melting of materials with picosecond resolution laser diagnostics, and investigated a variety of physical effects in heterostructures. LLE was first to develop a strengthening process for laser glass which improves glass laser performance for many industrial applications by more than a factor of five. Improvements in the modeling and fabrication of optical thin films have advanced the state of the art of high power laser devices. Liquid crystal devices have been developed for a variety of applications from protecting personnel against laser light to high-peak-power laser control devices. LLE scientists have recently demonstrated a pulse chirping technique which allows sub-picosecond laser pulses to be efficiently amplified. Potentially such small compact laser sources can achieve 10^{15} to 10^{16} W peak power for applications in materials science, fundamental research in quantum electrodynamics, and advanced particle accelerators. At lower powers, such systems can be used for high-accuracy optical radar systems and efficient white-light generators for optical spectroscopy.

Operation and Management of the National Laser Users Facility (NLUF)

In addition to its own important contributions to inertial fusion research, LLE operates the NLUF, the only open United States high-power laser laboratory available to qualified U.S. researchers from other institutions. The United Kingdom, Japan, and France have similar programs. From 1981-1985 over 1152 laser system experiments were conducted in support of users from Brigham Young University, Los Alamos National Laboratory, the National Bureau of Standards, the Naval Research Laboratory, the Goddard Space Flight Center, Physics International, Inc., the Polytechnic Institute of New York, the University of California at Davis, the University of California at Los Angeles, the University of Connecticut, the University of Florida, the University of Hawaii at Manoa, the University of Illinois, the University of Maryland, the University of Pennsylvania, the University of Texas at Dallas and Yale University. In FY86, users from the Naval Research Laboratory, Los Alamos National Laboratory, the University of Maryland, the University of Florida, and the University of California participated in over 117 target shots devoted to the NLUF program. The NLUF program produced 38 scientific papers in 1985-86. The extension of the LLE facilities to the broader scientific community, through the NLUF, is an important and productive achievement of the National program.

In order to continue this important national program which allows many fine institutions to participate and strengthen the Defense Programs technical base external to the National Laboratories, $625,000 is required in FY 88 to support the users of the NLUF whose proposals were recommended for funding by the DOE-approved NLUF Steering Committee.

LLE Program Funding and Management

The LLE staff is comprised of approximately 110 people with an annual budget in 1986 of nearly $12,000,000 of which $9,000,000 is devoted to fusion ($7,800,000 from DOE which supports 66 people). In addition to the full time staff, 72 students are presently engaged in the LLE effort. Of this number, 32 students are pursuing graduate research at LLE. To continue its mission to demonstrate the feasibility of laser fusion and in concert with recommendations of the NAS panel, LLE is requesting a total authorizaiton and appropriation of $12,400,000 for FY88. Of this amount, $8,400,000 is requested to support a level-of-effort operations budget (66 people and program operations at LLE) plus an additional amount of $4,000,000 is requested to fund the design engineering and development of the upgrade to the Omega laser facility to enable it to carry out direct-drive implosion experiments at or slightly below the ignition regime.

The request for the level-of-effort program funding is supported by the 1987 National Defense Authorization Act report of the House Committee on Armed Services. HR Report 99-718 noted that "The technical review group strongly recommended that the ICF program continue to be supported for at least the next five years at the fiscal 1985 level of effort."

The request for the additional design and engineering funds is consistent with the NAS report (pg. 27) that "The group at UR is now working on improving the drive symmetry of the 24 beam OMEGA laser sufficiently to allow compression of a cryogenic direct-drive target to 100-200 times liquid density. If this high-compression ratio can be accomplished with the small OMEGA laser, it would be necessary to take the potential of direct drive very seriously, and to consider a 30 kJ upgrade of OMEGA."[1] In order to reach the five-year decision point recommended in the NAS report and to have the data necessary to evaluate direct drive, the design activity for the upgrade needs to be carried out during FY 88. A decision on whether to proceed with the upgrade of OMEGA requires this design information. The Office of Inertial Fusion within the DOE is attempting to follow the NAS recommendations, even in the face of the President's budget, which does not follow the NAS recommendation for level funding for the ICF program. DOE has been particularly supportive of the NAS recommendation that "Even in stringent budget circumstances, the Committee wishes to emphasize the importance of maintaining the vigorous research and intellectual base at the universities and NRL. Indeed, given the present marginal level of support for the smaller programs, and their unusually high impact and productivity, an effort should be made to selectively strengthen the most meritorious activities." The Department of Energy has requested that UR provide detailed costs of design and construction along with a schedule for the upgrade, but the UR has no available funds to comply with this request without this additional authorization.

The scientific and technological benefits derived from the inertial confinement fusion program more than justify the resources this nation is presently investing in this effort. The Rochester program has been responsible for a number of important scientific contributions to ICF research over the years. Continued support of the program helps assure a strong national effort in inertial fusion research.

References

1. Review of the Department of Energy's Inertial Confinement Fusion Program (National Academy Press, Washington, D.C., 1986).

2. "Progress in Laser Fusion," by R.S. Craxton, R.L. McCrory, and J.M. Soures, Scientific American, August 1986.

STATEMENT OF THE GENERAL ELECTRIC CO.

My name is Robert C. Berglund, I am manager of General Electric's Advance Nuclear Technology operation. We are submitting written testimony by Dr. Wolfe that outlines General Electric's concerns over the lack of a viable U.S. nuclear power option and how we believe current constraints can and should be addressed. Because of time constraints I will limit my remarks to specific actions we believe can restore the U.S. nuclear option, provide long range energy security and regain U.S. nuclear leadership and influence in nuclear policies.

We wish to express full agreement with DOE's light water reactor program you approved last year. This government program, in conjunction with the EPRI requirements program and industry led designs, can provide the leadership and technical basis necessary to achieve regulatory certification of a standard design or designs. The regulatory certification that includes both final design approval and the public hearing process will provide the proof that we have the political will to allow nuclear power to be a viable option when new generation capacity is needed in the United States. We believe this effort has a high probability of achieving this objective at modest cost and in a timely fashion.

We also wish to express our support of the effort to explore the economic possibility of smaller LWR nuclear plants. Recently developed concepts can benefit from enhanced safety features that could help offset the perceived diseconomy of mid-sized systems. This effort along with the regulatory certification of existing advanced LWR designs will provide a comprehensive assessment of the LWR's potential in the near term.

While the LWR is clearly the technology of choice for the near term, the LMR is clearly the technology that could be needed for our long term energy security. Based on the current estimates of our economic, domestic uranium resources this need cannot be supplied by the LWR, or the longer range HTGR technology, but timely introduction of even a low breeding ratio LMR can satisfy this need. We are prepared to provide further details supporting this conclusion, if desired.

It is now appropriate for the U.S. to select a single innovative LMR concept and concentrate our resources on its development. We are nearing completion of the competitive innovative LMR program you established in 1984. This assessment has progressed to the point where a concept choice can be made on the technical merits of the competing concepts. Longer term commercialization should not be a key factor in this technical decision. When the most promising technical concept has been selected, we can then attempt an appropriate test for commercialization approach as part of its continued development. We strongly support DOE's proposal to make the selection this year.

We believe a successful innovative LMR program will require a commitment to a reactor test project. The economic viability of the competing concepts is almost totally based on a regulatory certification that would allow these plants to be built and operated more like a fossil plant than our current nuclear plants. We believe this is possible but only after the self-protecting nature of a prototype reactor assembly is fully tested to the public's satisfaction.

We are confident a reactor test project can be carried out within today's budget constraints. The cost of such a system test approach is estimated to be in the millions rather than the billions normally associated with other LMR programs like Japan and France, and the cost uncertainties associated with a reactor system test are substantially less than those associated with a full power plant..

While it is unrealistic to expect major private sector investments in today's environment, it is likely international cooperation could significantly reduce the demand for domestic resources. The worldwide interest in our innovative LMR concepts is increasing because of their potential competitive economics. We believe international participation can be expected once we make a commitment to a test project. This need not to be a chicken and egg dilemma. Our commitment to a test project can be contingent on a specified level of private sector participation inclusive of international support.

We support continuation of the metallic fuel development. However, the effort need not proceed past the proof of principal of the fuel's reliability, safety aspects and recycle economics. Further fuel development is unwarranted unless we have a proven reactor system that can utilize this fuel. Therefore the logical and most economic approach would be to combine the fuel's final verification with the reactor test project. This transition from basic technology development to proof of a system's viability is critical to controlling overall program cost and achieving definitive timely results.

I have tried to summarize for you what we believe to be a do-able and successful civilian reactors program. It is not without challenges, but it will provide definitive conclusions to the objective of assessing nuclear's potential in the U.S. within 5 years and a conclusion to long range energy security in a timely 10 to 12 year period. I believe our constraints are well defined and we now have the technical basis to address these constraints in a comprehensive program that can and will be successful. The current DOE budget provides the minimum to proceed toward these important objectives. We believe it should be maintained without change or dilution and urge your support for plans addressing the key elements mentioned above that we believe necessary for a successful program.

My name is Bertram Wolfe, I am a Vice President of General Electric and General Manager of its Nuclear System Technologies Operations. During this year I am also President of the American Nuclear Society. Over the past years I have presented testimony to this Subcommittee during a period when the ability to meet future U.S. energy needs with nuclear power has been waning. All nuclear plants ordered after 1973 have been cancelled and utility executives freely state that under today's conditions they would not commit to a new nuclear project. My testimony today is not intended to argue for a new program for building new nuclear plants. Rather I want to strongly suggest that it would be a failure on our part, both government and industry, and a grave and dangerous disservice to the American public if we did not maintain nuclear power as a meaningful choice for the United States, as it is abroad. Fortunately there are some positive programs and factors which with your support would help make this important, perhaps vital energy source an available option for our future.

Certainly there is reason for concern over the future of nuclear power. Although the Chernobyl reactor bears no resemblance to U.S. commercial nuclear plants, the Chernobyl experience has increased the public's apprehension and fear of nuclear power. For other reasons U.S. industry has lost the confidence to invest in nuclear plants or undertake major nuclear power development. Government funded research has declined and there is pressure for further decline.

On the other hand nuclear power continues to be the only economic alternative to an excessive reliance on fossil fuels. Yes, there have been growth pains, but our industry is less than 35 years old and during this period we have built and are now operating over 300 nuclear plants worldwide. Last year in the United States, nuclear power produced 384 billion KWh of electricity which is equal to our total electric power generation only 35 years ago; and this nuclear power production continued the perfect U.S. safety record of no radiation injuries or deaths due to nuclear power. Last year the world's nuclear generation of electricity displaced the consumption of one and a half billion barrels of oil. This production has been acknowledged by Sheik Yamani of Saudi Arabia as being a significant factor in the drop in oil prices which led to the reduction in our double digit inflation. (Indeed, it may have also been a factor in Sheik Yamani's fall from power.) Last year worldwide nuclear power generation reduced the discharge of CO_2 into the atmosphere by over a billion tons, or about half the CO_2 discharged by all U.S. fossil fired plants. If the greenhouse effect proves to be a real environmental problem, certainly nuclear is one of our prime candidates for major ameliorating action.

While nuclear power faces special problems, its growth has obviously been slowed by a problem common to all power generation, over-capacity. In the United States it is estimated our reserve margin is over 35 percent or almost twice that necessary for assured reliability. Today we have under construction 37 GWe of new nuclear plants and about an equal amount of coal fired capacity on order or under construction. With oil and gas prices at their lowest level in 10 years, there is no apparent need for new orders at this time. To varying degrees, these conditions are common in the world's industrialized nations.

However we should recognize that in the 13 years since the Arab oil embargo electrical use has continued to increase at a slightly greater rate than the Gross National Product (rather than twice the GNP rate as it did prior to 1973). On the other hand, the use of energy other than electrical energy has declined some 13% since 1973 so that our total energy use now is about the same as it was in 1973. The use of energy through electricity is generally the desired approach both for more efficient use such as electric arc furnaces, microwave ovens, heat pumps and to utilize electronic devices such as computers, video recorders, etc. As our population grows and becomes more affluent additional electrical use is expected. Thus one would expect electrical use to continue to increase at least in line with our GNP. If our GNP and electricity use increase by only 2% a year we will need new electrical capacity starting about 1997, with a new large (1000 megawatt) capacity addition required each month. With growth rates of 3 to 4% a year new electrical capacity will be needed in the early 90s with about two large additions a month. The issue facing the nation is in what form this new generation should be provided.

Let me respond by describing our choices. The choices before us are oil, gas, coal, nuclear power and the new sources such as solar, windmill, and fusion.

First, with respect to oil and gas, one should note that production in the U.S. and even in Alaska is starting to fall. In the case of oil, our importation has increased in the past year to the point where we are now approaching import levels similar to those before the oil embargo of 1973, and our importation will increase as our domestic production continues down. Indeed, the oil companies and the American Petroleum Institute warn that on our present course OPEC in the 90s is apt to be stronger than OPEC in the 70s. In the case of natural gas, there has been a surplus over the past few years. Nevertheless, we are depleting economic reserves of gas quicker than we are discovering new ones. The world's reserves of oil and gas are becoming more concentrated in the mid-east as other supplies are being used up. It is clearly not wise to use oil and gas for electrical supplies when there are viable alternatives.

Let me quickly skip over such sources as solar power and windmills. These electrical sources are far from economic except under very special conditions. Fusion, in which hundreds of millions of development dollars has been invested has not yet demonstrated its feasibility. With the depletion of oil and gas supplies, which provide over 60% of today's world energy use, we should clearly be developing new energy sources. But we should be realistic in the planning of their timely economic availability.

Let me turn then to the issues of the future use of coal and nuclear power. In contrast to most of the rest of the world, the United States has abundant coal supplies. However, as is well known, coal is not without its problems. The effects of acid rain, attributed to coal fired plants, are apparently becoming more acute. In addition, the health effects and projected premature deaths from the effluents of coal fired plants are of increasing concern. There are potential logistical problems as we increase our use of coal. It takes a 100 car freight train per day to fuel one large coal plant, and 40 freight cars of ashes each day must be disposed of. Most ominous, however, is the greenhouse effect from the burning of all fossil fuels wherein the carbon dioxide produced by fossil fuel burning tends to reduce heat loss from the earth. Calculations indicate this might raise the temperature of the earth by several degrees in the next century leading to such events as the melting of polar ice caps, flooding of coastal cities by tens of feet, and the turning of agricultural areas into deserts.

I should note that the efforts to produce clean coal plants through such advances as coal gasification and fluidized beds are ongoing, look promising and once demonstrated to be economic could ameliorate many of the concerns now associated with coal's use. In fact, new or retrofitted coal plants with modern effluent cleanup systems have reduced emission of harmful effluents. I also emphasize that the greenhouse effect is not yet a proven phenomena. Nevertheless, it would be foolhardy to ignore today's problems with use of fossil fuels and to proceed as though they will all be solved in the future.

This leads us back to nuclear power. Under the circumstances outlined above it clearly makes sense to provide for the future use of non-fossil energy sources. None of the available power sources are without their problems, but on balance, in my view, nuclear power can be our most economic, safest, most environmentally benign source for the future. It could be a tragedy for the U.S., which led the world's peaceful nuclear program in the development of economic nuclear energy, to be denied its future use because of artificial barriers. It would be a failure of our government and industrial systems if we were not able to develop near optimum technical and social arrangements for each of our power sources so that when the need arose our nation could choose the most suitable source for the time. I am not suggesting that we embark on a near-term program to build more nuclear plants but rather than we do the necessary work now to maintain nuclear power as a meaningful option for the future.

There are some positive developments in Washington and elsewhere. The Department of Energy (DOE) is developing a new civilian reactors strategic plan. This plan, with the help of Congressional guidance, is beginning to focus the Department's actions on the real constraints to nuclear power in the United States. As indicated in my introduction, the past few years have created an environment that requires considerably more than merely technological developments.

In the interim, some U.S. reactor manufacturers have continued to make significant technological improvements by working with overseas partners and customers where the environment for nuclear power is more favorable. These partners and their governments have recognized the value of this U.S. capability and maintained their long standing relationships in the development of advanced designs. We now have advanced light water reactor (LWR) designs that can be adapted to and deployed in the United States if we can solve the institutional constraints to their use.

The LWR program proposed by DOE and approved by Congress last year is a major step to eliminating these constraints. This government program, in conjunction with the Electric Power Research Institute (EPRI) program and the advanced designs alluded to above can provide the leadership and technical basis necessary to achieve regulatory certification of a modern standard design; certified designs that will help to effectively control the excessive costs and schedules now associated with U.S. nuclear plants.

It is hard to overemphasize the government leadership and dedication necessary to successfully complete a meaningful standardization program. GE has long been supportive of plant standardization, and was the first to pursue a license for a standard plant starting in 1973. However, continued changes in Nuclear Regulatory Commission (NRC) rules leaves us 13 years later still without certification. Our experience is not unique.

Under the DOE-EPRI program mentioned we expect to adopt the overseas designs to U.S. utility requirements and to carry out analyses and tests that will provide the technical verification for a firm and rational certification of the designs. We are confident, from a technical standpoint, that this can be done. The regulatory certification that includes both final design approval and the public hearing process will provide the proof that we have the institutional means to enjoy the benefits nuclear power can provide. In the case of G.E.'s advanced boiling water reactor (ABWR), we are pleased at the initial response by all the NRC Commissioners at our first presentation to them.

We believe it may also be advantageous if we could increase flexibility in the U.S. to economically deploy nuclear plants in increments of 500-600 MWe. Such designs must benefit from enhanced features such as special safety characteristics to offset the diseconomy of scale affecting mid-sized systems. To this end DOE is supporting a five year component development program that provides the type of data necessary to assess how such improved designs might proceed through an NRC certification process. Again, we are encouraged by the NRC's new policy which is intended to improve the licensing environment and minimize complexity and uncertainty in the regulatory process for advanced nuclear power reactors.

The LWR is clearly the technology of choice for the near term. It has received extensive development and has a well-established industrial infrastructure and experience base. We commend the Department of Energy and Congress for their insight in establishing this important program and fully support its continuation to a conclusion. If it is successful, this modest effort would go a long way towards re-establishing the U.S. nuclear option and could restore industry's confidence in the nuclear market.

The revival of the LWR and its widespread use raises the issue of the long term future of nuclear power. The LWR systems rely on the economic availability of a finite resource, uranium. Although there appears to be sufficient uranium to supply LWR's for at least several decades the real promise of nuclear power is an unlimited energy supply through the breeder reactor.

The development and demonstration of an economic liquid metal reactor (LMR) design is presently an ongoing effort internationally. Even with a low breeding ratio, the LMR, once fueled, can continue to maintain its capacity with essentially no new uranium supplies. Therefore, introduction of the LMR can eliminate the uncertainty over uranium supply and assure that nuclear power can maintain essentially any level of economic capacity that may be required. This has been the promise of LMR development from the early introduction of nuclear power and continues to be a goal for long term energy security.

Recent U.S. developments promise major reductions in the cost of developing and demonstrating LMRs that can be competitive with coal and conventional LWR systems. The modular approach, such as GE's PRISM concept when employed in the U.S. LMR program, promises to reduce the cost of prototype demonstration to less than a billion dollars rather than the multi-billion dollars associated with large monolithic designs. This approach may also be particularly attractive for the U.S. utility market since it permits capacity additions in small increments of as little as 138 MWe which reduces the initial investment commitment and help meet the uncertainty in future demand growth.

A key factor in the U.S. innovative LMR designs such as PRISM is the promise of enhanced reactor protection that could increase public acceptance of nuclear power once demonstrated in a comprehensive test project. This could lead to regulatory certification of a standardized LMR plant that allows nuclear plant construction with lower and more predictable costs and schedules.

While the above features are primarily directed toward U.S. constraints, their significance and innovation has been recognized by other nations. Once the U.S. makes a firm commitment to a test project, it is likely the interest abroad will increase, possibly to the point where international participation in such a project could reduce the demand on domestic resources.

I believe it is important to recognize that the success of our nonproliferation policy in the past was largely due to our technical leadership that allowed us to constructively influence nuclear energy development and use in directions acceptable to us. Indeed, it seems to be forgotten that the intent of President Eisenhower's successful Atoms for Peace program was not nuclear power for the U.S., but rather international nuclear technology leadership by the U.S. so that the widespread international movement towards nuclear weapons could be slowed or stopped. If we hope to continue this influence we must continue to have a leadership position in advanced nuclear developments. In the case of the breeder, and the world dream of an unlimited energy supply, the U.S. innovative LMR program mentioned above can once again put us in a technology leadership position.

Progress in this program has demonstrated the feasibility of the metal-alloy fuels in LMRs to achieve a reasonable burnup. This fuel also promises enhanced reactor protection and is currently the reference for the innovative LMR concepts. Additional developments involve demonstrating the reliability of production fuel in FFTF tests and completing the development of the integral pyrometallurgical reprocessing currently underway by ANL. We strongly support this fuel development. However, we believe that fuel development should be oriented towards reactor use and final proof of the LMR's fuels should be combined with a reactor test project. No amount of fuel development can overcome the constraints to the LMR without a viable reactor system. Therefore, it is logical that these two programs be combined into a comprehensive effort.

We are encouraged with recent DOE plans calling for the selection of a single innovative LMR concept in early FY88 and the optimization of the selected design by the end of 1988. We believe this will lead to a safety test program that will convincingly demonstrate the self-protecting nature of the innovative LMR and therefore help eliminate the institutional constraints that have contributed to the excessive costs projected for the LMR in the past. The qualification of the LMR in its safety test, and a successful fuel program will together provide an unlimited energy supply system for the U.S. and the world.

In conclusion, it is likely that the demand for electricity will continue to grow. The world petroleum problem over the long term is apt to get worse, not better. None of us can be sure of how long we can rely on fossil fuels as the predominant source of our energy supply. Nuclear power could be a vital factor in assuring future energy security but this assurance is far from certain today.

I believe there are three basic elements for a successful future national nuclear power program. First, the near term maintenance of the nuclear option should be pursued through LWR efforts leading to the regulatory certification of our advanced LWR designs. This is a modest effort that can be completed in existing programs within three or four years. Second, and the subject of another hearing, we must get on with a successful waste disposal program. This will have the dual effect of aiding in the public acceptance of nuclear power and demonstrating and exerting U.S. international leadership. And finally, we must for the longer term, and for international leadership, proceed with the selection, demonstration and certification of our most promising innovative LMR concept to assure these plants can be constructed and operated with user confidence and public acceptance.

Industry and government will have failed the American people if we do not place a meaningful nuclear option before them. Recent developments and actions by the Department of Energy and Congress show recognition of this situation and promise a redirection of the civilian reactors program that can indeed result in meaningful choices for the American public. The current LWR program appears well founded and should continue as planned.

The LMR could assure our long term energy security and we now have the opportunity to select and demonstrate a promising concept of U.S. origin that can lead to this promise.

We urge your support of these programs.

Letter From Charles L. Mankin, State Geologist of Oklahoma, Oklahoma Geological Survey

April 2, 1987

The Honorable J. Bennett Johnston
Senate Committee on Appropriations
Subcommittee on Energy and Water Development
SD-131 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Mr. Chairman,

We are pleased to submit the attached testimony for inclusion in the record of the subcommittee deliberations regarding FY 88 budget authorizations for the Department of Energy's civilian energy research and development programs.

As the members and staff of the subcommittee are aware, the domestic oil and gas production industry in America is in severe decline due in part to external forces as well as to natural production decline. While we applaud the efforts of the Senate to address the threat posed by rising imports, we urge this subcommittee to consider actions that will increase domestic petroleum production through improved oil and gas geoscience and recovery technologies for recovery of a major portion of the 300 billion barrels of oil that may otherwise be abandoned in the reservoir.

The Energy Research Advisory Board has recommended that, as a first step, the oil and gas geoscience and production technology research activities managed by the DOE Offices of Fossil Energy, Energy Research, and Conservation and Renewable Energy, be consolidated and integrated under a single high-level Office of Geoscience Research. This integrated program would be managed under a strategic plan and implemented through six regional "centers of excellence," made up of universities, consortia of universities or consortia of universities and National Laboratories.

ERAB has also recommended an increase in funding for research activities under the consolidated program. ERAB suggests that $50 million should be added above the FY 87 appropriated level in FY 88, rising to an incremental $100 million by FY 90.

The attached testimony and brochure strongly endorse the ERAB recommendations and detail how we believe the program might begin. While it would be beneficial for the Senate to hold specific hearings on this matter we urge this subcommittee and the full committee to adopt language supporting the ERAB recommendations and to appropriate adequate funding to make this important proposal a reality.

We appreciate very much your attention to this matter of critical national concern.

Sincerely,

Charles J. Mankin

Charles J. Mankin
State Geologist of Oklahoma

Joint Statement of Dr. Charles J. Mankin, Oklahoma State Geologist; Dr. William L. Fisher, Texas State Geologist; and W. Timothy Dowd, Executive Director, Interstate Oil Compact Commission

We have taken the unusual step of preparing joint testimony to underscore our grave and mutual concern. That concern is that the public interest is being endangered by the extremely low budgets for federal hydrocarbon production research over the past several years.

The reason we have chosen to present this joint statement is that *no formal, organized advocacy exists whose business it is to present the issues we are here to present.* While the existing organizations and associations of the petroleum industry are engaged with issues they, legitimately, see as more immediately pressing, we are here to address the more fundamental issues of national energy security, international competitiveness, and economic viability of our way of life. The implications of the lack of a large, organized coalition will be made clear in our testimony.

SUMMARY

We will present evidence to support the following observations and recommendations:

1. *Insufficient domestic production of liquid transportation fuels is the energy problem facing the U.S.*, potentially affecting all Americans and the nation as a whole in profoundly adverse ways. It is a public problem, requiring solutions by public agencies, in close cooperation with the private sector. Reducing this problem is the *highest priority energy objective* facing the U.S. today. We simply cannot afford for the energy security of this nation to be dictated by the policies of foreign governments or uncontrollable events in unstable parts of the world.

2. While imports are rapidly rising, increasing the risks to national energy security and competitiveness, more than 300 billion barrels of crude oil -- *2/3 of all oil discovered to date in the U.S. -- is being abandoned* in known U.S. reservoirs. That is ten times our current proved reserves.

3. *Advanced technologies* could enable production of as much as *90-100 billion barrels* of this oil at reasonable prices -- more than quadrupling our current proved reserves and enabling the maintenance of the present domestic production level over the *next 30 years*. These would include methods for geological/geophysical definition of critical unknowns in these reservoirs, coupled with advanced technologies for locating and completing infill wells and for contacting, displacing, and mobilizing trapped oil. The same geological/geophysical technologies and some of these same extraction technologies will also increase the efficiency of natural gas recovery. Additional technological advances will be required for maximum gas production, but natural gas could, over the long term, provide significant quantities of domestic transportation fuels, either as compressed natural gas, methanol, or synthetic gasoline.

4. Petroleum production and service companies, acting individually, are *highly unlikely* to invest enough in the R&D needed to realize and commercialize fully these advanced technologies, for a variety of very legitimate economic reasons. In brief, operators and service companies with significant research capabilities have more pressing obligations to their stockholders and more profitable opportunities abroad and through acquisitions strategies (pro and con) than investing in R&D for long-term domestic production, especially after the recent price collapse and current price volatility. The producing states and their universities already invest heavily in oil and gas R&D but, with declining production, falling prices, dwindling tax bases, shrinking grant support and appropriations, they are less and less able to sustain that commitment. Thus, as a *public problem of energy security*, the issue becomes a *federal responsibility*.

5. Current federal oil and gas R&D efforts are, in the words of the Energy Research Advisory Board (ERAB): *"unacceptably small . . . not focused on the highest priority needs . . . fragmented . . have no overall coordination or strategic plan . . . are only discipline or service oriented."* Federal oil and gas R&D has fallen in both absolute and relative terms every year since 1979, despite DOE policy statements about its desire for a "balanced and mixed energy base" to provide "adequate energy at reasonable costs" to all Americans. DOE's FY88 budget recommendation for oil extraction research is 0.16% of the overall Department's R&D request. Adding in all oil, gas, and shale research still brings this to only 0.25%. This is, indeed, unacceptably small.

6. Last year, this subcommittee was one of the few to recognize the problem and the federal role in solving it. You instructed DOE "to submit a report on a 5-year research program in geoscience related to the discovery and recovery of oil and gas resources by January 1, 1987."

(The report is now three months overdue.) And, you appropriated $3 million for oil and gas discovery and recovery research.

7. Synthesizing the views of essentially *all expert groups* who have evaluated the situation from the perspective of public well-being (including ERAB), we recommend *consolidation, enlargement, and strategic integration of the management of federal research in oil and gas discovery and recovery and geoscience technology* in a single high-level DOE Office of Geoscience Research (OGR) located in the "oil patch." OGR would be responsible for developing and coordinating an *overall strategy for all civilian federal R&D in geosciences and their associated extraction technologies, while directly managing the specific R&D relating to oil and gas extraction and advanced geoscience technology.* The *actual oil, gas, and geoscience technology research* would be conducted at several *university "centers of excellence"* in the major producing provinces, as well as by the national laboratories and others selected competitively on the basis of competence and performance.

8. Because domestic oil and gas production is the highest priority national energy problem, the integrated program should be provided, as recommended by ERAB, an *overall budget in FY88 of an incremental $50 million over current allocations to the fragmented oil and gas R&D efforts, rising to $100 million in incremental funding by FY90.* Specific, quantitative goals (and corresponding data collection and analyses to determine rational priorities) for research to increase domestic oil and gas reserves and production should be advanced. The program should be carefully and fully coordinated with private sector R&D, especially that conducted through private and public-private research consortia. Progress toward the goals should be evaluated quantitatively and qualitatively annually, with formal updating of the strategy biennially.

BACKGROUND: A NATIONAL, PUBLIC PROBLEM

The first third of this century was wide open in the "oil patch," with alternating booms and busts that made and broke millionaires and communities alike every two or three years. The production practices of the time wasted vast quantities of precious oil and natural gas resources as wildcatters "topped the cream" to beat the next bust. To prevent the potential loss of natural resources, the Connolly "Hot Oil Act" entrusted conservation of the nation's oil and gas to the states in 1935. The Interstate Oil Compact Commission was formed by the governors of Texas, Oklahoma, Colorado, Illinois, New Mexico, and Kansas to coordinate this mandate among the states. The six founding governors were later joined by 23 others and 6 associate members. (Figure 1)

Through the IOCC, state conservation statutes and regulations were developed and coordinated in ways that brought both relative stability and maximum feasible recovery -- at that time, generally 10-15% of the discovered oil-in-place -- by primary recovery. The state geologists actively participated in this process, bringing the best available scientific understanding to the deliberations of the Commission and the state conservation agencies.

During the 1940s and 1950s, the IOCC and state geologists actively promoted expanded use of the then-new technology of waterflooding and other efficiency-improving techniques through research and outreach activities. This helped stem the decline in primary recovery and raised the maximum feasible recovery to about 1/3 of the oil-in-place. (Figure 2) Of this third, 139 billion barrels have already been produced and 28 billion barrels remain to be produced by current technology.

During the 1960s and 1970s, the IOCC and the state geologists continued to encourage resource conservation and efficiency, but also began to address issues of environmental protection and safety in the "oil patch."

However, events of the 1970s and 1980s revealed several key facts that stimulated new initiatives. These facts are:

- First -- and this is critical -- *inadequate domestic production of liquid transportation fuels is the only genuinely urgent and serious energy problem facing America.* Oil provides 40% of U.S. primary energy, with about 1/3 from foreign sources. Almost two-thirds of the total oil is used in transportation. Put another way, oil provides 97% of the energy in the transportation sector. This sector includes more than 180 million motor vehicles that annually drive in excess of 1.7 trillion miles annually -- roughly the distance to Saturn and back. But the requirement for liquid fuels goes far beyond the conveniences afforded by the automobile. Without it, the planes we fly between our home states and Washington would be grounded. Without it, food and goods that define our standard of living could not come to market. Without it, much of our national defense would be rendered immobile. Any disruption in this system can have major adverse economic, logistical, and defense consequences to oil for liquid transportation fuels. By contrast, America has all the other fuels we need in relative abundance. Only oil must be imported in significant quantities.

- Second, we will have *no real alternative to oil for liquid transportation fuels for at least a generation*. There are promising developments for using natural gas in transportation -- as compressed natural gas, methanol, or gasoline synthesized from methane. The methanol option is particularly interesting because it can also utilize coal, wastes, etc., as feedstocks. Although these developments ultimately will prove significant, the time required to develop these alternatives, implement the needed infrastructure, and convert any significant portion of the total U.S. transportation sector can only realistically be measured in decades. Consider the replacement of all the gasoline pumps at all the convenience stores across the country, for example.

- Third, *the health of the national and state treasuries is heavily affected by domestic oil production*. Back when the oil price was $28/bbl, more than $10 flowed to the public -- $7 to the federal government and $3 to the states -- for every domestic barrel (Figure 3). These revenues are mostly lost to the exporting nation when we import crude oil. Most of the major producing states are heavily dependent on oil production for public revenues. (Figure 4) In aggregate, the domestic petroleum industry paid more than $50 billion in federal, state, and local taxes, royalties, and rents in 1985. The price collapse of 1986 has reduced these amounts appreciably at all levels of government.

- And finally, *America does not control its oil future*. (Figure 5) Three times since 1973, OPEC governments have made decisions that created economic crises or insecurities for our nation. They first orchestrated an embargo, second a massive oil price rise, and, third and most recently, a dumping of large quantities of oil on the market to cause oil prices to collapse to levels too low to sustain marginal U.S. production or permit investments in exploration and development. OPEC, especially its Middle Eastern membership, has this kind of impact because it holds 95% of the world's surplus production capacity. The Middle East has 57% of the world's reserves with 4% of the world's consumption; North America and Western Europe have 16% of the reserves, but 52% of the consumption. We will return to the implications of this most recent round of OPEC actions shortly.

- In summary, let it suffice to say that the *dependence on unstable foreign sources* of the needed transportation fuels *endangers the domestic economy, national security, trade balances, international competitiveness, and indeed our very way of life*. (Figure 6) Both times that oil prices jumped, U.S. unemployment increased significantly and recessions (measured by shrinkage in GNP) set in. Of course, other economic events were also occurring, and no one would draw hard conclusions from only two data points. However, these correlations are just too obvious to ignore: Policy decisions by foreign nations can have significant negative consequences on U.S. economic health. The data are still out on the national economic consequences of the 1986 oil price collapse, but we know that massive, concentrated unemployment and genuine depression have resulted in the "oil patch." Moreover, until 1983, removal of petroleum imports would have resulted in a *positive balance of payments* (Figure 7). In the last two months of 1986, our oil import "habit" amounted to *exporting more than $100,000,000 per day from our economy to those of the countries who sell us oil*. If oil prices were to jump again, as they have twice in recent memory, this $100,000,000 per day could double over night, but our production response might take months or years to begin offsetting it.

These are public issues. We are not here to tell you about the immediate problems of our region or of the petroleum production and service industries. We are here to tell you that *major national issues, affecting the lives of all Americans, are at stake -- and few appear to be paying attention.*

In light of these facts, the IOCC and the state geologists have continued to promote conservation, efficiency, environmental protection, and safety. But, we have also sought to go further in pursuing the public well-being. As the representatives of the governors charged with resource conservation, we recognized that the people of these states and the nation as a whole are best served if we directly address the central problem by encouraging increased domestic oil production. So, we have undertaken some new projects, including research and educational programs to promote the advance of technologies for producing more oil in the U.S. Meanwhile, other state agencies and academic institutions have enlarged their individual efforts along similar lines. Special institutes and consortia for petroleum research exist in Texas, Oklahoma, California, Kansas, Wyoming, Colorado, New Mexico, Illinois, and several other states, but their activities are now being cut back due to shrinking state appropriations and private grants.

The problem of inadequate domestic production of liquid transportation fuels presents a "clear and present danger" to the U.S. Yet, the public, the federal government, and even parts of the oil industry seem to want to ignore it.

IMPACT OF RECENT DEVELOPMENTS

Almost all are aware of the dramatic and drastic changes 1986 brought to the U.S. energy picture. The hard numbers on production losses are now in, and their first-year devastation exceeded our worst expectations.

The massive dumping of foreign oil by OPEC caused an unprecedented collapse in oil prices. The largest annual oil production loss in U.S. history was posted in 1986, and 1990 production is projected to be 30% lower than the 1985 level (Figure 8). Imports during 1986 increased at a rate equal to the rapid rises in the 1970s and are within two years of the 50% mark, far exceeding the heavy dependence of the 1970s. The hard lessons in energy we learned in the 1970s have been forgotten; the future's problems are likely to be worse and this future could arrive soon.

The high prices of oil and natural gas during the late 1970s and early 1980s brought forth aggressive exploration and development. (Figure 9) Reserve additions increased, equaling and even exceeding levels of production. Near decade-long reserves and production declines were arrested in the lower 48 states. (Figure 10)

Due to conservation and stabilized domestic production, overall net imports of energy were reduced to half the level of the 1970s; imports from the Arab countries in OPEC fell from a 1979 high of 3.0 million barrels per day to less than a half million barrels daily in 1985. Imports, which had reached nearly half of the U.S. total supply of petroleum in 1977, were reduced to about one-third of total supply by 1985. The U.S. lower 48 states in 1985 produced 2.0 million barrels per day of crude oil more than if the declines of the 1970s had not been arrested. The threat to national security posed by high levels of imports and vulnerability to supply disruptions, and the reality of economic destabilization caused by oil-price shocks, were seemingly things of the past -- until last year.

The events of 1986 drastically changed the world and U.S. energy situation. The higher prices stimulated so much worldwide incremental production that OPEC, especially Saudi Arabia, lost massive market shares -- by year-end 1985, the Saudi market share was less than one-fifth what it had been in the early 1980s. So, the Saudis decided to act, and the price collapsed. The response in the U.S. was dramatic. The U.S. rotary rig count in the last half of 1986 was only 40% of its 1985 count and less than 20% of the level of the early 1980s. This is the lowest level since 1940, when rig count data began. Seismic activity in 1986 ran less than half the level of 1985 and a bare one-third the level of the early 1980s. This is the lowest level since 1935. The loss in oil production capacity has been swift and deep.

When the data are in, we predict that as many as 40,000 wells in 1986 will have been abandoned because of these price gyrations. In the 12 months ending in January, we lost more than 680,000 barrels per day of U.S. production. That's a 7.7% decline in one year. Meanwhile, demand increased 4.1% in the month of January alone and imports soared by 30.6% for the year. In the last two months of 1986, we imported more than six million barrels per day of crude oil and refined petroleum products.

Looking at production, Alaska was up over 1985 and federal outer continental shelf (OCS) production showed no decline in 1986; however, both are expected to decline in the near future if prices remain. If the gain in production of Alaskan oil and the stable production in the federal offshore are backed out, the onshore lower 48 states, suffered a loss of 725,000 barrels per day, a December to December drop of 12%, and most of this loss is permanent.

Beyond the concentration of losses to onshore lower 48 areas, some producing provinces were hit especially hard. Areas of the country where a very large percentage of production is from marginal stripper wells took a devastating average annual loss of production in excess of 12%; January through December saw declines *in excess of 20%*. Particularly hard hit was the "independent operator country," such as North Texas, Oklahoma, and Kansas, as well as the Rocky Mountain States.

Lower-48 regions that enjoyed strong reserve growth in the 1980s, which equaled or even surpassed production, have benefited from technology-driven reserve additions such as infill drilling and carbon dioxide flooding in the Permian Basin of West Texas and steam-flooding in California, and experienced the least, but still notable, decline. California onshore and state waters had a January through December decline of less than 10% and an average annual decline of just under 4%. If the 20,000 barrels per day mandated production shut-in of Elk Hills is discounted, average annual declines held at only about 2%. Texas managed an annual decline of 6%, equal to its greatest previous annual decline in 1979. *The strong reserve growth areas of the Permian Basin kept the Texas decline from being twice the actual rate.* These results reflect both the potential of advanced technology to sustain production and the reluctance of operators to desert previous "sunk cost" investments.

If low and volatile worldwide prices persist, U.S. liquid hydrocarbon production could be as little as 6.2 million barrels per day in 1990, 30% less than in 1985, or a 6% average annual decline. At the same time, we project, even with trends away from U.S. heavy industry, demand for oil will grow in the 1-3% annual range. This will result in 50% dependency on imports by 1989, exceeding the all-time historical high reached in 1977. Significantly, this level of consumption of imports will translate to a utilization of OPEC capacity at over 80%, *precisely the levels reached when the 1973 and 1979 price shocks were effected.* Others, e.g., the NPC, are more optimistic in their assumptions, but only slightly so, predicting the critical 50% point at most a year or two later (Figure 11). The Gas Research Institute sees the 50% mark within the first half of the 1990s.

Thus, the *severe national, public problems* discussed earlier are once again upon us. Our energy security, international competitiveness, budget and trade deficits, and regional and national economic viability are once again endangered.

POSSIBLE SOLUTIONS

The problems we have sketched have recently been documented in considerable detail by the National Petroleum Council, industry advisors to the Secretary of Energy, and by the Interagency Task Force on Energy Security. Both described "options," but neither recommended solutions. Let's examine some broad classes of possible solutions, assuming for the moment, that the public, the federal government, and the industry fully recognized the problem and agreed to solve it. A number of approaches might be pursued:

- *Import fees, quotas, etc.* These steps would have the effect of increasing the realized price on domestic oil. Tax incentives would, likewise, improve the economic attractiveness of domestic production. Such steps can be justified on the grounds of public revenues and of other public benefits, e.g., increased national security, reduced defense or strategic reserves outlays, assurance of economic stability, etc. This would have the effect of holding more marginal wells on production and, perhaps, stabilizing near-term exploration and development investments, but, alone, such strategies can only defer the "day of reckoning," unless more efficient technologies become available. These issues are highly controversial and not germane before this subcommittee, so we will leave them at this point.

- *Demand reduction.* The nation has done well in learning to conserve. The combination of high energy prices, new technologies in energy use, conservation laws and regulations, etc., have loosened the linkage between energy use and GNP growth. However, all the "easy" steps have been taken and also many of the hard ones. The remaining possibilities will require massive changes in the nation's infrastructure or way of life.

- *Fuel switching.* Vehicles powered by natural gas, methanol (from natural gas, coal, or other substances), or synthetic gasoline from methane probably will make the next major contribution to domestic transportation. We must encourage the developments, but we must recognize that they will make a significant impact on the transportation fuel issue only in the long term. Synthetic gasoline from coal is even further in the future. Of course, active fuel switching routinely occurs in stationary and utility applications as the "heavy ends" of crude oil are actively traded off with natural gas, coal, and other fuels. Most of the opportunities to conserve oil in favor of other fuels, however, were previously exploited while oil was relatively higher in cost.

- *Increased domestic discoveries.* This is the most obvious solution and is currently being pushed hard by the Department of Interior. Let's look at this a little more closely.

In terms of oil exploration and production, the U.S. is the most mature area in the world. In the past 15 years, more than 800,000 wells have been drilled in this country. That is four times as many as in the rest of the free world combined. After this much drilling, we cannot expect to discover enough new reservoirs to improve the situation significantly, although new discoveries will have a role to play. The U.S. Geological Survey estimated in 1980 that about 80 billion barrels of oil remained to be discovered in the U.S. (Figure 12) More recently, however, dry holes, e.g., in the Atlantic and Arctic offshore, and restricted access to significant portions of the resource, e.g., California offshore, Arctic areas, wilderness areas, etc., suggest that, for practical purposes, future new discoveries will be smaller than the USGS estimates. Further, between 1970 and 1983, the proportion of newly-discovered fields larger than 1 million barrels of producible oil fell from 27% to 2% of new discoveries, despite the increased amount of exploration and the stabilization of new reserves. Thus, the oil left to be discovered will most likely be found in small, subtle traps that will require much more sophisticated geological and geophysical approaches. Moreover, because these new reservoirs will be smaller, we must find improved technologies to increase their ultimate recovery if we are to establish their economic viability.

Beyond import fees and quotas, tax incentives, demand reduction, fuel switching, and increased discovery of these small and difficult new reservoirs (each of which may have a definite strategic role), there is really *only one way to increase domestic crude oil production significantly: produce more of the oil from the already known reservoirs.* (Figure 13)

As mentioned earlier, current maximum recovery is still, on average, only about one-third of the oil in the reservoir. The other two-thirds of the known oil is bypassed or trapped in the rock after available technology has been efficiently applied. The remaining unproduced oil is of two types:

- Nearly 100 billion barrels are mobile but unswept by conventional processes, a portion of which is producible if *geologically targeted infill drilling technologies* can be developed to locate, contact, and flood it properly.

- About 230 billion barrels are immobile, trapped in the reservoir rock by viscous and capillary forces, a portion of which can be displaced and mobilized if continued advances are made in *tertiary recovery technologies.*

In the 1940s and 1950s, many said we were running out of oil, that the massive reservoirs discovered in the twenties and thirties were "drying up." But then new technology of secondary recovery stopped their decline and sustained their production into the 1970s, when once again these reservoirs appeared to be "drying up." New technologies are again needed. Some of the new technologies have already begun to become available. In geologically favorable settings in California, for example, steam soak and steam drive have *essentially held their increased production rates* from older, heavy oil reservoirs, while onshore production in the rest of the contiguous states has seen a decline of over 12% since the price collapse.

The needed new technologies include: *vastly improved geological data acquisition, interpretation, and modeling; substantially improved infill well location and well completion techniques; and significantly improved tertiary recovery processes and models.* For these technologies to become available, significant amounts of *closely integrated research and development* are required.

Estimates of the potential additions to U.S. reserves and production by these new technologies vary. But, based on estimates by the National Petroleum Council, the Department of Energy, the Texas Bureau of Economic Geology, the Energy Research Advisory Board, and the General Accounting Office, the *overall potential of these resources could be 90 to 100 billion barrels which could be produced over the next 30 years at Sreasonable oil prices* (Figure 14). Even that accomplishment would still leave more than 200 billion barrels for which still more advanced, novel technologies would be required.

Ninety billion barrels would more than *quadruple our current proved* reserves. If only this amount could be produced, the U.S. could sustain its current level of production for 30 years, giving the nation a "little breathing room" while newer transportation fuels begin to take up the slack. These numbers are not wild speculation, but the product of serious, detailed analysis by the leading experts from industry, academia, and government laboratories. The needed technologies are advanced but they are not science fiction. Concerted, focused R&D of fairly modest magnitude is needed, not another "Manhattan Project" or "SDI."

R&D REQUIREMENTS FOR REALIZING THE POTENTIAL

Producing more of the oil in known reservoirs will require two different techniques:

- *Tertiary recovery* (also known as enhanced oil recovery, or EOR) to produce the immobile oil trapped in the portions of the reservoir previously swept by secondary recovery.

- *Geologically targeted infill drilling* to produce mobile oil that was bypassed by secondary recovery. This also increases the volume of reservoirs that can be produced by both secondary and tertiary recovery.

Both these techniques require substantially greater geological and geophysical data collection and interpretation of the reservoirs than is currently possible. For either to be effective requires essentially the same geological and geophysical advances. In fact, the needed research will also have additional, direct application in improving recovery of natural gas, shale oil, tar sands, etc., and, especially, in the discovery of the subtle traps mentioned earlier.

As part of its research and educational effort, the IOCC is conducting a series of state-level analyses of EOR. Working with the detailed, reservoir-by-reservoir data and models developed by the National Petroleum Council in conjunction with the DOE Bartlesville Project Office, the IOCC has recently completed a study of tertiary oil recovery in the state of Oklahoma. This is the second report in this series. New Mexico is also completed and we are beginning to study the reservoirs in Texas. The IOCC objective was to examine the impact that state tax incentives and R&D to advance technology would have on incremental production, state tax revenues, direct economic activity, etc. (Figure 15).

The dashed line across the top of the chart represents Oklahoma's current proved reserves for reference. The results of the study are displayed in the groupings of four bars at each of the oil prices shown:

- The left-most bar in each group represents the incremental EOR reserves at the respective oil prices if there are no incentives and no advanced technology. This, a "business as usual" case, shows the extreme sensitivity of EOR technology to oil price. In brief, without incentives or technology advances, Oklahoma's EOR potential becomes important at prices approaching $24/bbl but does not become really significant until oil prices reach $32/bbl or more, a development not expected for many years. Unavoidable reservoir abandonments before the price reaches that level will substantially reduce this potential.

- The second bar in each set shows what happens with state tax incentives, but no technology advances. The tax incentives show a major increase in incremental reserves. Incidentally, this increase comes at *no loss in state revenues, as the incremental production more than pays the costs of the incentives* -- a true case of a "non zero-sum" situation for public-private cooperation.

- The third bar in each group shows what advanced technology due to research can do, without state tax incentives. Here, the gain in incremental reserves is even larger than it was for tax incentives alone. Improving the technology has a double effect: it makes the processes more efficient, reducing the costs and risks of their application, and it makes more difficult reservoirs amenable to the EOR processes, resulting in substantially greater incremental reserve additions at all prices.

- The last bar in each set shows the reserve additions attributable to the combination of state tax incentives and advanced technology. Clearly, *significant incremental reserves can be had at oil prices as low as $20/bbl. If prices should rise as high as $23/bbl, the reserves of Oklahoma can be more than doubled.* Further, these estimates are for EOR only, excluding geologically targeted infill drilling, which might equal or exceed the EOR estimates, especially at the lower prices.

Both economics and technology clearly have vital roles to play in realizing the potential of known U.S. reservoirs. Of the two, the Oklahoma results suggest that, given a reasonable range of oil prices, technology advances may be the more important. The national estimates by the National Petroleum Council in 1984 suggest the same conclusion.

To summarize to this point, our central energy problem is an inadequate supply of domestically produced liquid transportation fuels which forces an unacceptable dependence on insecure imports. Yet, two-thirds of known U.S. oil is currently unproducible. Conservation in domestic energy production is no different from conservation in domestic energy consumption. Congress has found the need to increase efficiency in consumption sufficiently compelling to launch significant programs in the latter, but why not the former? We have seen that public attention to increased efficiency in energy use has led to significant national benefits. Without compromising these initiatives, now is the time to *increase the efficiency of domestic oil production.* Advanced technologies could substantially increase recovery efficiency, making a significant portion of this remaining oil producible. But, these technology advances can only be made through focused, integrated research. So, who should do the needed R&D?

PRIVATE R&D: INCOMPLETE

Until very recently, many have argued that the petroleum industry will conduct all the needed research. But, *industry alone cannot -- and should not be expected to -- perform all the needed R&D.* For some time, the multinational major oil companies, who have the strongest R&D capabilities, have found exploration abroad and on Wall Street more profitable than long-term commitments to high-tech production in the U.S.

For the last decade, foreign exploration and production expenditures have increased more rapidly than domestic expenditures in all years but one (Figure 16). Even the exception proves the rule: in that one year, foreign expenditures remained at about the same high level established in the preceding year.

The result of these shifts in expenditures is clear. Of the largest 13 U.S. owned companies, nearly half of their production is from foreign reservoirs (Figure 17). This chart excludes Shell and Standard (SOHIO) because they are owned by foreign companies. If their full parent company production were included, the foreign average would be still higher.

The reason for the increasing emphasis on foreign operations is quite simple (Figure 18): finding costs are lower abroad, so it is more profitable to explore in new regions, finding large reservoirs that can be produced by conventional means, than to invest in high-risk, high-tech recovery in the U.S. OPEC knows this. The price collapse engineered by the Saudis had, as one of its objectives, the elimination of just such high risk, high tech production so lower cost OPEC oil could increase its market share.

Turning to "Wall Street exploration," since 1981, nearly $64 billion have gone into mergers and acquisitions of major oil companies (Figure 19). Friendly or hostile, these transactions have produced huge debts, reductions in staff, and clear management preferences for short-term profitability over longer-term investment, especially in R&D for high-tech domestic production.

The "crash of '86" has accelerated the general reductions in expenditures that began in 1982 into massive cuts in "non-essential" activities (Figure 20). R&D departments and research grants to universities were the first and hardest hit. Petroleum industry research was never large in proportion to sales or profits relative to other major industries (Figure 21). Even this small relative amount was largely focused away from oil and gas. In 1984, only 20% of the R&D expenditures of 25 major oil producers was dedicated to oil, gas, tar sands and oil shale. "Other energy" accounted for 27% and "non-energy" 53%. Since 1982, oil and gas as a portion of total oil company R&D investment has been falling. In absolute terms, private petroleum R&D has fallen by more than one-third in just the past few months, although detailed data are not yet available.

And, finally, the vast majority of U.S. producers have no R&D capability. More than half of U.S. production is attributable to companies ranked below the 20 largest. (Figure 22) Few would even recognize the names of these companies.

In 1985, there were more than 24,000 petroleum producing companies geographically dispersed all across the country. (Figure 23) After last year's crash, their numbers must be substantially reduced. Still, the vast majority are obviously small and have little or no R&D capabilities. However, these independents drill the majority of the wells and hold the majority of the productive acreage in the contiguous U.S. Their share of U.S. production and reserves will increase as, with growing frequency, large multinational operators seek to sell their U.S. properties. Few of the independents have foreign activities or the capabilities to acquire them. These companies, along with the integrated multinationals, will be the ones to apply the new technologies if they become available. Getting the needed new technologies into the hands of the operators will generally require cooperation of the oil field service companies: independent firms which specialize in drilling, well completions and stimulations, consulting geologists and petroleum engineers, and other specialties. The service industry is crucial in transferring new technologies but, with few exceptions, these firms also have little or no R&D capabilities.

We are *not* being critical of the oil industry. In their decisions, managers of these companies are pursuing the best interests of their stockholders. They must pursue the highest returns available and, especially in recent years, these returns are evaluated in the short term. Foreign exploration and purchases of reserves by acquiring erstwhile competitors are simply more profitable and shorter-term strategies than would be investing in extensive, long-term, risky research for domestic application. Managers who fail to recognize this are inviting the attention of "corporate raiders." That the result of these pressures fails to serve the domestic public interest is legitimately not their concern. *The public interest is the concern of the public agencies, not private corporations.*

So, if the nation's problem of domestic transportation fuels can be solved by technology advances but individual companies in the private sector alone cannot conduct all the R&D needed, the public sector becomes the last resort -- appropriately, because of the benefits of this work to the public as a whole. As we mentioned, the producing states are already working on the problem through their universities, research institutes, state geological surveys, conservation agencies, and multi-state agencies. The collapse of oil prices, production, and, hence, tax revenues in these states, however, limit their ability to expand their efforts. This leaves a major role for the federal government. How well has the federal program done?

FEDERAL ENERGY R&D: IMBALANCED

A panel of the Energy Research Advisory Board, the scientific advisors to the Secretary of Energy, has evaluated federal geoscience research for discovery and recovery of oil and gas. Among their findings were the following:

- *"The major energy problem facing the United States is a shortage of domestic liquid hydrocarbons which threatens long-term energy security and international competitiveness."*

- "The goal for the Enhanced Oil Recovery program should be the advanced geoscientific technology necessary to produce at least 100 billion barrels of oil over the next 30 to 40 years."

- Relative to this goal, the present federal research programs were evaluated as:

  - *"Unacceptably small...*
  - *"Not focused on highest priority needs...*
  - *"Fragmented...*
  - *"Have no overall coordination or strategic plan...*
  - *"Are only discipline or service oriented."*

Illustrative of this is the budget history of the enhanced oil recovery program. (Figure 24) The Federal government saw EOR as a relatively important priority through 1979. Since then, the budgets have been significantly reduced.

Despite oil's vital role in transportation, despite the national dangers and costs of oil imports, and despite the vast resource of remaining known domestic oil, the oil research budget has never exceeded 7.1% of the federal fossil energy research budget. Since fiscal year (FY) 1980, it has averaged only 3.2%. The DOE request for FY 1988 is 2.5% of the Fossil Energy budget. *This is a travesty.* It represents the *serious imbalance* in the nation's energy research priorities. *We heartily agree with the ERAB panel conclusion that petroleum research be given highest priority in the federal energy research program.*

An examination of the DOE proposed budget for FY 1988 reveals the following: (Figure 25)

- Research and development is 40% of the total DOE budget of more than $14 billion;

- Of the research and development budget:

  - Weapons and naval reactors are nearly one-half;
  - High energy physics (mostly fundamental science and SDI) is 14%;
  - Nuclear energy supply is 12%; and
  - Fossil energy is 6.5%.

- Of the research and development budget for domestic energy supply:

  -- Nuclear fuel is nearly 60%;
  -- Solar and renewable energy is 8%; and
  -- Fossil energy is 32%.

- Of the fossil energy research and development budget:

  -- Coal is nearly 84%;
  -- Program administration is 11%; and
  -- Oil, gas, shale, and tar sands R&D -- even assuming that all "cooperative ventures" are for oil and gas research -- are collectively 5.6% ($20.9 million), of which only 38% ($13.9 million) is actually earmarked for oil and gas research; the balance being allocated to as yet undefined applied "cooperative ventures" with industry.

- As noted, EOR research and development to increase supplies of domestic oil is only 2.5% of the fossil energy research and development effort, which makes it only 0.16% of the annual DOE R&D budget. That is to say that, as requested, R&D to address our highest priority energy needs -- inadequate domestic transportation fuels -- amounts to *less than two-tenths of one percent* of the DOE research budget.

Even by eliminating defense research, R&D for domestic oil extraction technologies is still only 0.4% of the federal civilian energy research budget (Figure 26). This compares to the nearly 42% of the nation's primary energy requirements oil provides. Meanwhile, gas research is proposed for 0.06% while gas is expected to provide 24% of the nation's energy. Yet, we've argued that oil and gas, as domestic transportation fuels, are our highest priorities.

These imbalances are simply incredible. What causes such gross imbalances?

The first cause of the imbalance is the *ambivalence of the petroleum industry about federal research.* The industry has not formed a coalition to support federal research, for several reasons:

- First, when industry examines the federal petroleum research programs it comes to the *same conclusions as the ERAB panel* -- too little, too fragmented, too unfocused, too disciplinary to have any serious prospects of significantly improving domestic production;

- Second, the industry has traditionally sought federal assistance on the other side of the federal ledger -- tax, price, and tariff issues -- but not outlay programs. So, the producing states tend to be underrepresented on the R&D committees relative to advocates for R&D in other energy forms;

- Third, as we have pointed out, the larger multinational companies find foreign exploration and domestic acquisition more profitable than R&D for uncertain, future high-tech domestic production;

- Fourth, many companies believe they may have some competitive advantage in trade secrets that public research might reveal. In fact, few such secrets exist and those few cannot be long concealed once put into application; and

- Fifth, the industry is obviously diverse in its interests. Independents are fundamentally different from multinational, integrated major oil companies, and both differ greatly one from another. Service companies are also highly diverse, both in size and interest.

A second reason for the imbalance is that the long-standing and well-organized lobbies have presented the case for nuclear and coal research very effectively. R&D for nuclear energy is a legislated requirement. Improving the demand and environmental acceptability of using nuclear energy and coal for electricity generation benefits nearly all electric utilities, mining companies, and miners. Numerous members of Congress are enthusiastic supporters of nuclear and coal research. There is no standing lobby for oil and gas research.

The third reason for the imbalance is the history and organization of DOE research. The major "ancestors" of ERDA were the independent Atomic Energy Commission and the smaller Office of Coal Research, formerly in the Department of the Interior. Nuclear and, to a lesser degree, coal, dominated the ERDA agenda. Oil and gas were, in a sense, "new" responsibilities with no major tradition, no lobby, and little industry support.

When DOE was formed, ERDA became the backbone of the Department's R&D efforts. The budget analysis presented earlier shows the continued dominance of the "ancestor" agencies. Nuclear research is largest, coal next. Excluding synthetic liquids and gases from coal, both are primarily directed at environmentally acceptable electricity generation. However, while a shortage of electricity generation has been predicted for the future, the immediate national problem is domestically produced transportation fuels.

This means oil and gas production research, which is centered in the DOE Office of Fossil Energy. Today's Fossil Energy is the direct descendent of the Interior Office of Coal Research before ERDA and DOE. The historical objective of that office and of FE today is to increase the domestic demand for coal by improving the efficiency and environmental acceptability of coal utilization, especially in electricity generation. As America's "most abundant" energy resource, this is a reasonable federal objective. Coal and coal utilization technologies are also seen as important exports, another desirable development, given our balance of payments situation. However, the emphasis on increasing coal demand and/or export is essentially *irrelevant* to the nation's *critical problem of energy security*. That problem centers on transportation fuels, and the solution to that problem, at least in this century, lies in *increased domestic production of oil and gas*, not in increased demand for coal.

The implications of FE's coal demand orientation are several:

- First, many of the people who were once charged with increasing the demand for and utilization of coal are now expected to view the totality of the U.S. fossil energy problem. This may be asking them to abandon many deeply ingrained beliefs and attitudes.

- Second, organizations tend to have "memories." Even new staff are subject to the same working assumptions and "ground rules" as their predecessors.

- Third, the two largest FE field organizations, the energy technology centers at Morgantown, West Virginia, and Pittsburgh, Pennsylvania, are both primarily dedicated to R&D for coal use and/or conversion. This creates an advocacy within FE to continue and expand coal R&D.

- Fourth, the attention of effective management is necessarily focused by priorities. The table below suggests the priorities FE headquarters assigns to oil and gas research, if "dollars in play" is a reasonable indicator of priority.

FY 1987 Activities and FY 1988 Requests
Programs Managed by Fossil Energy
(Millions of Dollars)

Program	FY 1987 Activities	FY 1988 Request
Naval Petroleum Reserves		
- (Federal Outlays)	(162)	(177)
- Revenues	608	700
Strategic Petroleum Reserves	147	270
Total, Reserves Programs	**755**	**970**
Clean Coal		
- (Federal Costs)	(149)	(199)
- Total Costs, with cost-sharing	298	398
Coal "R&D"	203	109
Total Coal RD&D	**501**	**507**
Oil, Oil Shale and Gas R&D	**38**	**14**

Bureaucratic and managerial imperatives make oil and gas research about 2% as important as NPR, 5% as important as SPR, and less than 3% as important as coal and clean coal research. Oil and gas R&D represent less than 1% of the total FE responsibility as measured by the dollars involved. It should not be surprising that oil and gas R&D is a minor "afterthought" to FE management, given its full responsibilities. That this belies the facts -- that oil and gas will provide two-thirds of U.S. energy requirements this year (and 60% in the year 2000) and that imported oil is the crux of the U.S. energy security problem -- is largely explainable by the history, organization, and current responsibilities of FE.

Thus, there is little or no advocacy for oil and gas research even within FE, but significant advocacy for coal research, which just manages to hold its own relative to nuclear in the overall DOE R&D priorities. Add to this the practice of incremental (or decremental, in recent years) budgeting and oil and gas R&D tends to be only an annoying afterthought to the serious, but priority-conscious FE management.

A fourth cause of the imbalance is the sophistry of some "policy economists" who have convinced themselves that oil is just another price-sensitive commodity, ignoring such "externalities" as public taxes and royalties, energy security, the costs of strategic reserves and rapid-deployment military capabilities, exaggeration of business cycles, trade deficits, etc. Foreign governments, not "free markets," decide world oil supply and demand. To pretend otherwise is to ignore the obvious.

A fifth cause of the imbalance is the image that the oil production industry has permitted to emerge in the public mind:

- The 1970s bumper sticker "Drive fast, freeze a Yankee in the dark" remains etched in the national memory.
- The profiteering speculators and "promoters" who have shamelessly taken money from naive oil and gas investors.
- The TV show "Dallas" shows the nation every week how oil men "really" behave. J.R. Ewing, if he ever existed in real life, has long since moved on to insider trading on Wall Street.

Although they are now totally false, these images persist. Together, they continue to obscure the reality of America's energy situation.

The truth of the matter is that all Americans are at risk as imports from insecure, foreign sources rise. All Americans would suffer from the inflation and recessions resulting from foreign nations' petroleum policy decisions. All Americans share in the costs of trade deficits. All Americans contribute to costs of the strategic petroleum reserves and the rapid deployment force, aimed principally at emergency interventions in the Middle East. And all Americans need adequate supplies of transportation fuels at reasonable costs to maintain their standard of living. *The issue is not one of regional or industrial favoritism: it is a national, public problem.*

The causes of the imbalances not withstanding, the present situation is terribly wrong: for lack of an organized coalition, a different history, or a positive public image, the public interest in domestic oil production is not being served.

It is time for the federal government to recognize its responsibilities in this compelling national problem and to redress the imbalance in our energy research priorities.

Last year, appropriation of this subcommittee was one of two "bright spots." You acknowledged the problem and recognized the federal role. You found DOE budget justification in this area "deficient." You directed DOE to submit a "report on a five-year research program in geosciences related to the discovery and recovery of domestic oil and gas resources by January 1, 1987." We understand that DOE has not yet submitted this report. And you appropriated an incremental $3 million for discovery and recovery research in the budget for the Office of Energy Research.

The other "bright spot" last year was the House Science and Technology Committee report which, although it was overcome by events in the appropriations process, recognized the full magnitude of the problem and its solution. As the record shows, the Committee was so concerned about the problem that it was prepared to authorize $50 million for an integrated oil-gas-geoscience R&D program within the DOE Office of Fossil Energy (OFE), alone, plus the geoscience efforts within OER.

We appear before you to encourage you to take the next steps -- steps that are commensurate with the problem, but well within the bounds of fiscal responsibility and marginal feasibility -- toward energy security and international competitiveness.

Today, you consider the OER appropriation in the relevant areas. Your counterparts in the Subcommittee on Interior and Related Agencies will take up the OFE appropriation. Our recommendations affect both. We hope that the two subcommittees can find ways to coordinate the solutions to what is, in fact, a single, integral problem.

GENERAL RECOMMENDATIONS

Our appeal today is that you continue to consider seriously the rather bizarre situation that has evolved, wherein *research to produce our most critical energy resource is last in federal R&D priority.*

Our expertise and concerns are related to domestic oil and gas reserves and production. We don't presume to say whether the funding levels for research in other energy sources are or are not appropriate. From the perspective of the public interest in domestic oil production, however, the programs are, as the ERAB panel said, too small, too fragmented, and too unfocused to realize the potential of the known, remaining U.S. oil resource or to address the critical problem of inadequate quantities of domestically produced liquid transportation fuels.

Our concerns and recommendations are not unique. In fact, they represent a synthesis of *every expert group* that has examined the critical U.S. energy problems from the national perspective. The problems, issues, and alternatives have recently been well stated by the National Petroleum Council (NPC), the industry advisory committee to the Secretary of Energy, and the Interagency Task Force on Energy Security, representing the views of DOE, but incorporating the analyses, data, and consultation of thirteen other federal agencies. Both of these assessments clearly document the problem we have described and identify "options" for solutions -- but without recommendations.

Without the statistical exercise of these later studies, the Energy Research Advisory Board (ERAB), the scientific advisory board to the Secretary of Energy, has also defined the problem but it has suggested concrete solutions in the area of R&D. Our suggestions to this subcommittee amount to endorsing the ERAB recommendations and providing a few implementation details.

We are not alone in these suggestions. At this time, our recommendations are endorsed by a number of organizations with the expertise to evaluate the problem and possible solutions from the perspective of national well-being. These include: the *Interstate Oil Compact Commission*, organization of the governors of the oil and gas producing states; the *Southwest Regional Energy Council*, the organization of the legislatures of the oil and gas producing sates; the *State Geologists* of 30 states; the *American Association of Petroleum Geologists*; the *Gas Research Institute*, research arm of the gas industry; several associations of independent producers and service companies; geology and petroleum engineering professors from 16 universities; and an ad hoc committee of 14 former R&D directors from major oil companies and federal oil and gas research programs (see attached brochure). This list of voluntary endorsements came forward in *only the past two weeks*, so you can see the level of concern about this problem.

We hope that this subcommittee can support our recommendations in its deliberations. "Business as usual" solutions will not resolve this major problem. Statesmanship will.

Our recommendations closely follow those of ERAB in proposing an integrated and enlarged federal program of advanced oil and gas geoscience and production technology research. Our first recommendation is fiscal:

Recommendation 1 *Appropriate a budget for an integrated advanced oil and gas geoscience and production technology research program at $50 million more in FY88 than was passed in FY87, to rise to a minimum incremental addition of $100 million by FY 90.*

These incremental amounts are the recommendations of ERAB and others. In FY87, the research programs for extraction of liquid and gaseous hydrocarbons total $34 million. Our recommendation is for $84 million in FY88, including the $50 million increment. (Figure 27). Our proposal, slightly more detailed than ERAB's, includes refocusing existing R&D programs, while increasing them by 14.7% (to $39 million in FY88), coupled with new geoscience initiatives totaling $45 million. The refocusing represents some shift from oil shale research toward Enhanced Oil Recovery (including both enhanced recovery of light oil, heavy oil, and tar sands, and geologically targeted infill drilling) and Unconventional Natural Gas, but a much less drastic shift than requested by DOE. This refocusing is consistent with the ERAB observation that the contribution of oil shale will be later than that of EOR, but could be substantial.

In addition, we recommend new initiatives that are also consistent with, but more specific than the ERAB recommendations, including those to:

- Establish an overall strategic plan for federal oil and gas geoscience and production technology research and an integration activity to develop plans and the data bases, models, and information systems to implement and evaluate it.

- Implement an activity of research to develop ways to define reservoir heterogeneities and subtle traps, incorporating new measurement, interpretation, and geological modeling techniques.

- Institute an activity to develop the highest priority, highly advanced technologies to measure and describe reservoir properties and other geological/geophysical phenomena and utilize this information in designing exploration and extraction programs.

- Pursue cooperative ventures with consortia from industry (or possibly states or universities) to transfer the findings of the foregoing research into proven practice.

A year ago, we opposed "cooperative ventures" because, as detailed to that point, they lacked substance. The substance is still being worked out through a series of DOE meetings. We are conditionally recommending them because we can envision productive use of this mechanism in encouraging development of public-private consortia (such as proposed by Sun Company and, earlier, by ARCO). We can also see individual cooperative ventures that could be valuable, but *only in the context of an overall, integrated strategic plan.* More detail must be prepared to warrant unconditional endorsement.

These recommendations clearly emphasize domestic oil recovery through EOR and geoscientific research, with unconventional natural gas second, and oil shale third, consistent with the ERAB recommendations.

Several funding sources could make these sums available without untoward hardship. ERAB found that the present geothermal and geopressured energy research programs in the Office of Solar and Renewable Energy (OSRE) are substantially overfunded relative to the future potential of this, while pointing out that a number of the scientists and engineers engaged in this program could usefully be employed in an integrated oil, gas, and geoscience technology program. Other OSRE programs were also identified by ERAB for consolidation and integration. ERAB also noted that the extensive but "fragmented and disciplinary" geoscience research projects in the Office of Energy Research might be re-focused on solving specific problems and then incorporating them. As an alternative, the Gas Research Institute has suggested earmarking up to 3% of the federal share of royalties from federal lands as investments in R&D that would ultimately increase the recovery efficiency from these lands. *Even in times of tight federal budgets, funds for this critically important R&D can and must be found.*

We suggest, for FY 88, that the funds for refocusing the existing program be appropriated through the OFE budget, while those for the new initiatives be appropriated through the OER budget. Careful language should be included to direct DOE to plan and manage the resulting program as an integrated whole.

The next three recommendations are strategic and organizational.

Recommendation 2 Establish the following as goals toward which *a comprehensive, integrated research program must strive:*

To provide the basic understanding and advanced geoscientific and petroleum engineering technology necessary to produce:

- *At least 90 billion barrels of oil from currently known U.S. liquid hydrocarbon deposits, primarily by tertiary recovery and geologically targeted infill drilling of conventional reservoirs, complemented in the longer term by tar sands and oil shale;*

- *At least 100 billion barrels of oil and oil-equivalent gas from newly discovered U.S. reservoirs, principally from subtle traps in mature basins and in frontier areas; and*

- *At least 700 Tcf of natural gas from unconventional natural gas reservoirs.*

These are listed in order of priority.

Recommendation 3 — *Require detailed quantitative data collection and analyses to assure the highest priority (i.e., largest contribution to domestic transportation fuel production and highest cost-effectiveness) objectives are being pursued in the context of a concrete, integrated strategic plan. The strategy, analyses, and progress toward the above goals should be reported to Congress biennially.*

Recommendation 4 — *Integrate management of federal oil, gas, and geoscience technology research into a high level Office of Geoscience Research (OGR) located in the "oil-patch." The research itself should be conducted at carefully selected "centers of excellence," national laboratories, and others selected competitively for competence and demonstrated performance.*

By focusing federal research on technologies to meet concrete, future production goals, clear priorities and rational trade-offs can be made on the basis of detailed, quantitative analyses of potential future incremental production. Required reporting will assure that the strategy remains focused on highest priorities. By consolidating management of the integrated, interdisciplinary approach, important technical synergies can be exploited. By placing this research squarely in the "oil patch," the transfer of data, technology, and understandings of the problem are enhanced as both researchers and appliers of the new technologies relate directly to the federal research program and the program can be coordinated with other research in the field.

The Office of Geoscience Research would have responsibility for developing an integrated research strategy for all federal, civilian geoscience activities and their associated extraction technologies. It would coordinate implementation of the strategy and evaluation of its performance across all the participating agencies. OGR would, in addition, directly manage the specific R&D relating to oil and gas extraction and advanced geoscience technology research (i.e., all the elements in the detailed budget recommendation). This research would be implemented largely by university "centers of excellence" located in each of six major oil and gas provinces, as well as by National Laboratories and others selected competitively on the basis of competence and performance. We would encourage the formation of consortia of universities or universities and National Laboratories to serve as these detailed planning and implementation centers. If industry or other research consortia are formed under the cooperative ventures program or otherwise, OGR would provide a specific point of contact between federal oil, gas, and geoscience technology research to assure coordination and integration of its programs with those of the consortia.

Organizationally, the OGR should be a unit of the DOE Office of Fossil Energy and should report directly to the Assistant Secretary. It should have the status of the two Fossil Energy coal research centers in preparing plans and advocating for hydrocarbon and geoscience technology research.

RESEARCH RECOMMENDATIONS

Our more specific research recommendations are presented below in each of the standing program areas. The new initiatives shown earlier in the detailed budget should be integrated within these programs rather than established as separate budget items. This would underscore that both the refocusing of the existing programs and the new initiatives are designed specifically to meet the concrete goals stated above and explicitly not to become isolated, disciplinary inquiries. For example, the majority of reservoir heterogeneity work should be conducted in the EOR program and the majority of the advanced geoscience technology work in the Advanced Process Technology program.

Enhanced Oil Recovery. Because inadequate U.S. production of liquid transportation fuels is the critical national energy problem, this research area should be the centerpiece of the overall hydrocarbon and geoscience technology research program. It should pursue an interdisciplinary strategy in which the contributions of geology, geophysics, geostatistics, and reservoir and chemical engineering are fully integrated toward achieving the goals described above. It should include improved methods of reservoir description -- measurement, interpretation, and modeling of the resource -- at the scales of the basin, the reservoir, the flow-unit, and the microscopic pore, and incorporate analytical methods for integrating these scales. Improved geophysical logging and coring techniques, as well as means of using these data, are needed. Of particular importance are reservoir heterogeneities. These determine the location of unswept mobile oil and the performance of tertiary recovery. They should be analyzed and modeled carefully. Closely related work will also improve the ability to locate subtle oil and gas traps and will benefit the production of other hydrocarbon resources, e.g., tar sands, oil shale and unconventional natural gas.

These efforts should be intimately related to additional research on the respective extraction processes, as the reservoir descriptions represent the context in which these processes operate. Detailed methods for systematically locating sites for infill wells based on geological knowledge, as opposed to simple geometry, are critically needed. Research into rock-fluid and fluid-fluid interactions will define the oil extraction mechanisms of displacement and mobilization. Predictive modeling will integrate the reservoir descriptions, well-placements, and extraction mechanisms to permit the invention, design, and testing of improved drilling and extraction technologies. Finally, improved monitoring and diagnostic techniques will enhance the ability to control the processes in the reservoirs. Such an integrated strategy of basic and applied research (carefully designed to complement, not duplicate, industry R&D) holds the promise of substantial progress toward the national objectives. The present fragmented and undersized efforts do not.

Advanced Process Technology. R&D in this program area should be directly integrated with the EOR research strategy. The APT program is "cross-cutting" in that its work is generally usable in producing and using more than one resource. Its first priority should be, in ERAB's words, "development and adaptation of advanced technological tools and methods required for more cost-competitive and environmentally sound energy exploration and development." A primary effort should be to adapt the improvements in geoscientific technology developed in the EOR research to the other, related resource areas, e.g., shale oil and unconventional natural gas, and develop advanced tools that may have application in many geoscience activities, e.g., waste management, nuclear resources, etc. Such tools might include remote sensing, advanced computing applications, and improved drilling, logging, and seismic approaches. A related, second emphasis should be on the upgrading and processing problems of heavy oils from EOR, tar sands, and shale oil, so that yields of transportation fuels from these resources can be economically increased. A third emphasis should be on environmental, health, and safety research in hydrocarbon extraction and processing.

Shale Oil. Research is needed to expand the geological, chemical, and physical characterization of the resource, exploiting the methodological and instrumentation synergies with the EOR program strategy. Both eastern and western shales should be included because their physical and chemical properties differ substantially. This research should be conjoined with further developments of environmentally acceptable technologies for mining, rock crushing, retorting (both surface and, especially, in-situ), management of wastes, and capture of valuable by-products.

Unconventional Natural Gas. Developments in reservoir description and geologically targeted infill drilling techniques from the EOR and APT programs should be evaluated and adapted for application in the unconventional gas resources. Well stimulation technology research should be closely coordinated with the Natural Gas Supply Program of the Gas Research Institute for maximum benefit. Predictive modeling and control of stimulation treatments should be pursued. Of the several respective unconventional gas resources, tight sands should take precedence. These have the largest potential, at least at gas prices expected in the foreseeable future.

All four areas should continue to collect basic resource data and to refine the available, quantitative "systems models." These permit sensitivity analyses of alternative combinations of specific R&D projects. In this way they provide a rational basis for the concrete trade-offs required to assure that the full strategy is moving with optimum efficiency toward the stated goals and not the product of log-rolling. The Tertiary Oil Recovery Information System (TORIS) represents a solid foundation on which to build the required analytical systems models, especially if, as recommended by ERAB, additional geological data are incorporated and comparable models of natural gas are developed. The Gas Research Institute maintains a suite of models that may be an appropriate point of initiation for analyzing the gas resources.

Our earlier comments about the IOCC state-level analytical studies suggest the willingness of the IOCC and the producing states to participate actively in a concerted state-federal approach to this critical problem. This willingness is tangible. We believe that our "Project on EOR and the States" (which utilizes TORIS), while only an analytic exercise, may create significant, new understandings and opportunities. The states are committed to increasing domestic production through research. The Texas legislature is currently considering a bill for cost-sharing in EOR research. Creative ideas for coordinated state and federal strategies, organizations, and funding should be developed.

We also encourage creative public-private cooperation with both state and federal levels of government involved directly with producers and service companies who are concerned about these problems.

Given our budgetary, strategic, organizational, and research recommendations, the oil remaining in known U.S. reservoirs could be a major component in a national strategy to increase domestic production of transportation fuels, and, thereby, to enhance the energy security, international competitiveness, and economic health of the nation to the public benefit. The other resources addressed by this testimony add to this potential.

Thank you for your attention to this vital national concern.

FIGURE 1

MEMBERSHIP OF THE INTERSTATE OIL COMPACT COMMISSION

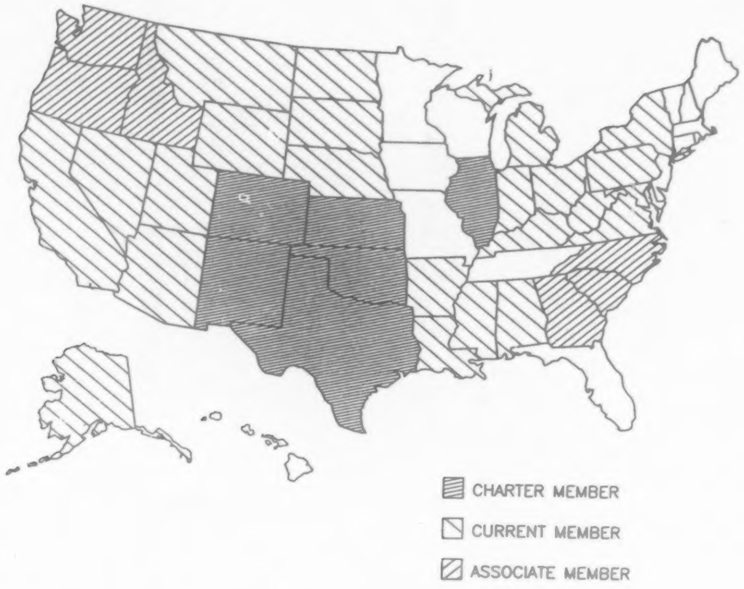

▨ CHARTER MEMBER
▧ CURRENT MEMBER
▨ ASSOCIATE MEMBER

FIGURE 2

PRIMARY PLUS SECONDARY PRODUCTION
OF ORIGINAL OIL-IN-PLACE
(Billions of Barrels)

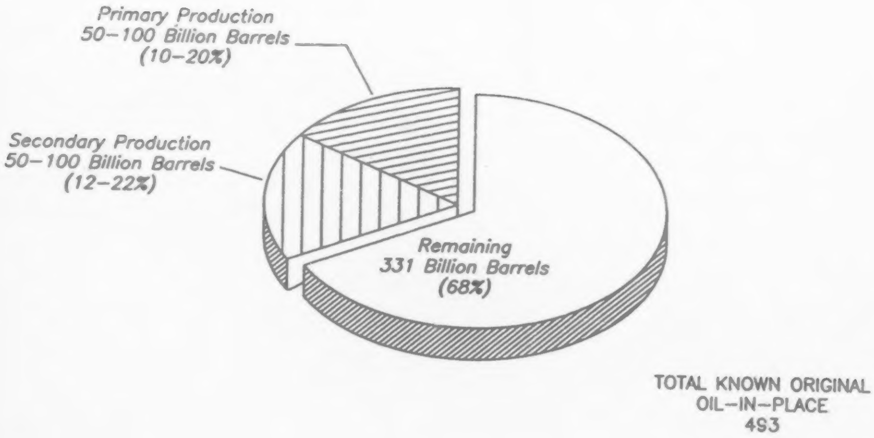
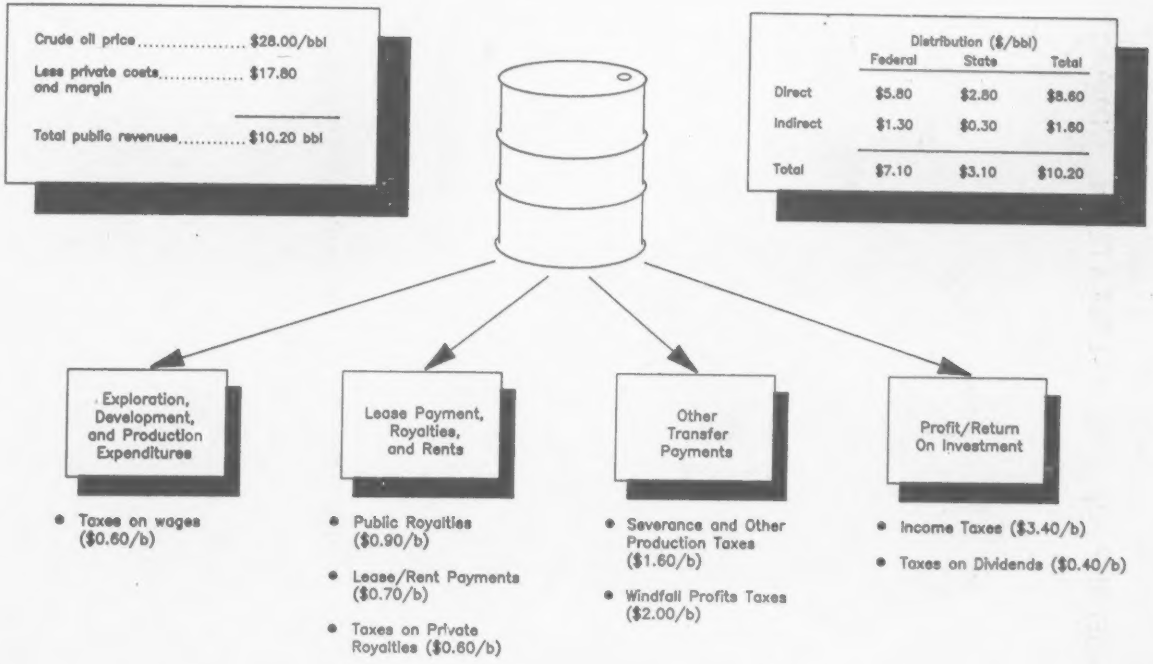


FIGURE 3

SOURCES OF PUBLIC REVENUES FROM DOMESTICALLY-PRODUCED CRUDE OIL

Crude oil price $28.00/bbl
Less private costs and margin $17.80
Total public revenues .... $10.20 bbl

	Distribution ($/bbl)		
	Federal	State	Total
Direct	$5.80	$2.80	$8.60
Indirect	$1.30	$0.30	$1.60
Total	$7.10	$3.10	$10.20


Exploration, Development, and Production Expenditures
Lease Payment, Royalties, and Rents
Other Transfer Payments
Profit/Return On Investment

Exploration, Development, and Production Expenditures:
- Taxes on wages ($0.60/b)

Lease Payment, Royalties, and Rents:
- Public Royalties ($0.90/b)
- Lease/Rent Payments ($0.70/b)
- Taxes on Private Royalties ($0.60/b)

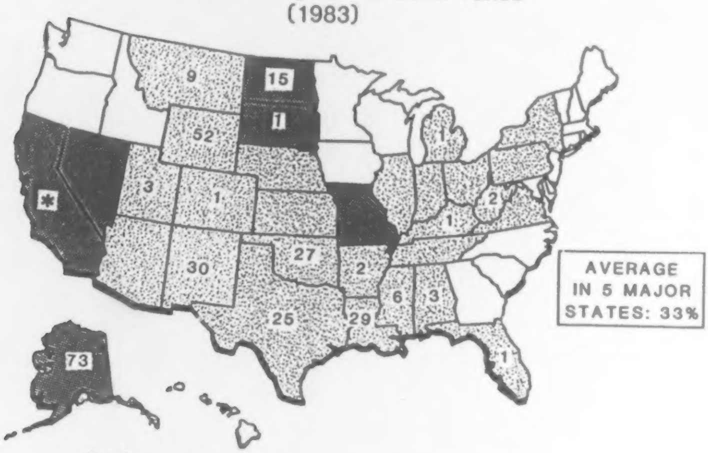
Other Transfer Payments:
- Severance and Other Production Taxes ($1.60/b)
- Windfall Profits Taxes ($2.00/b)

Profit/Return On Investment:
- Income Taxes ($3.40/b)
- Taxes on Dividends ($0.40/b)

SOURCE: Godec & Kuuskraa, 1985.

FIGURE 4

Petroleum Severance and Production Taxes[1] as a Percentage of All State Taxes (1983)


9
15
1
52
3
1
*
30
27
2
25
29
6
3
1
1
2
1
73
AVERAGE IN 5 MAJOR STATES: 33%

▨ Producer States With Declining Production From Peak Year

■ Producer States Not Yet in Production Decline

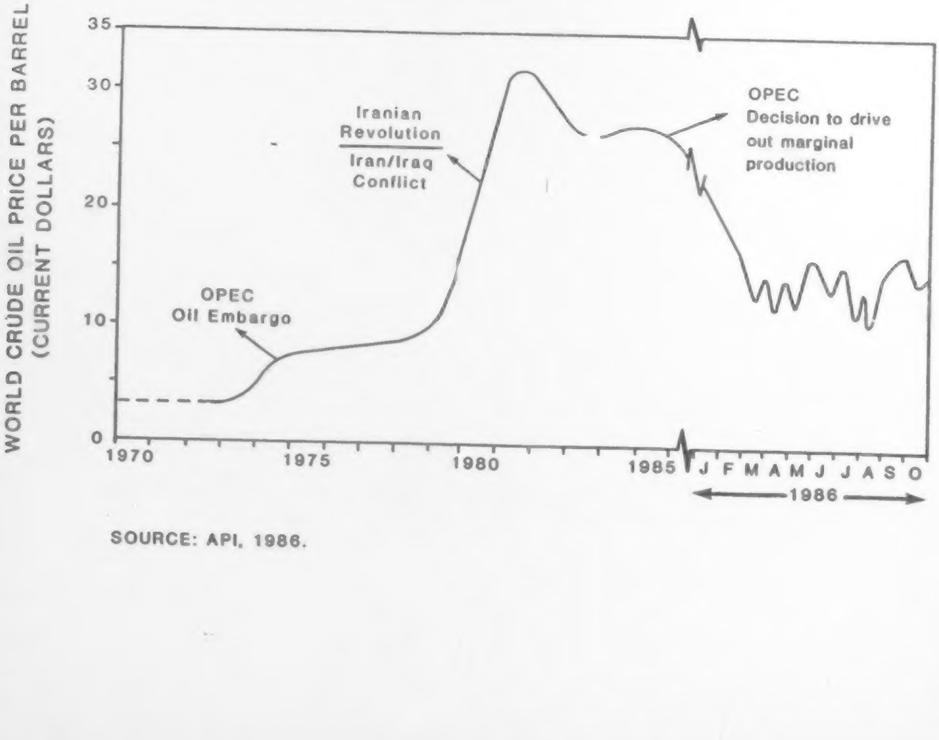
1. Does not include royalties, rents, income taxes, or sales taxes from petroleum.

*California Has No State-wide Severance Tax

SOURCES: API; IPAA; U.S. Department of Commerce; EIA; 1984

FIGURE 5

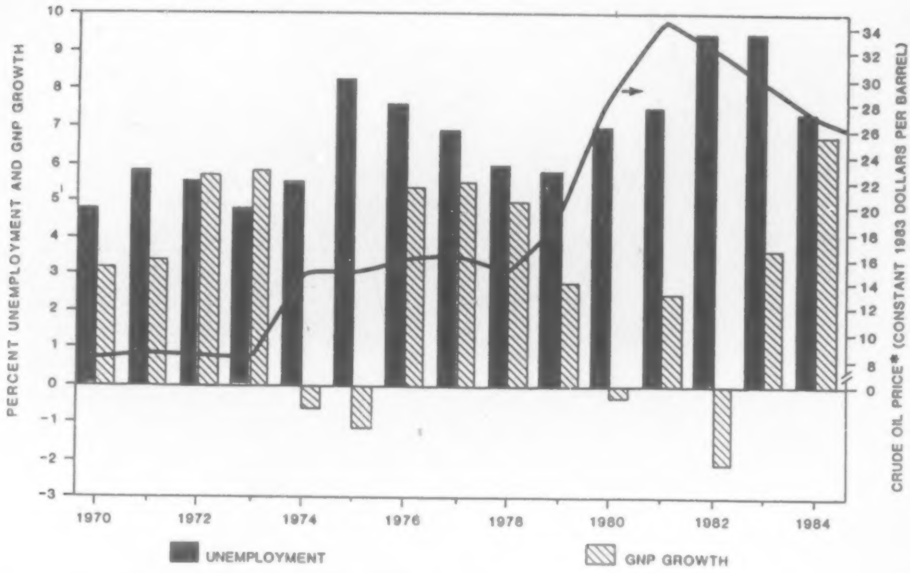
ALL RECENT SIGNIFICANT PRICE CHANGES HAVE BEEN DRIVEN BY EVENTS IN THE MIDDLE EAST



SOURCE: API, 1986.

FIGURE 6

Oil Price Effect On U.S. Economy

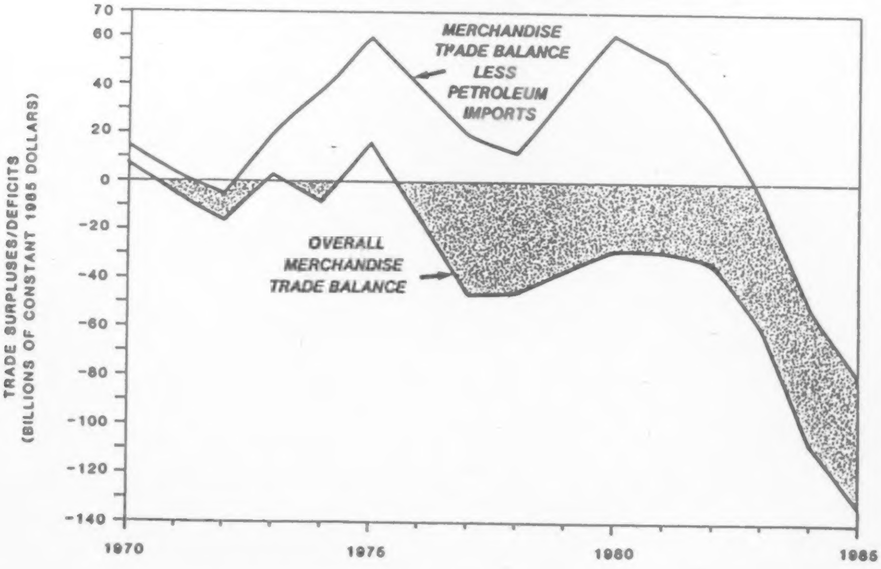


*WEIGHTED AVERAGE OF DOMESTIC PRODUCTION AND IMPORTS

SOURCES U.S. Department of Commerce, 1985
API, 1985
EIA, 1985

FIGURE 7

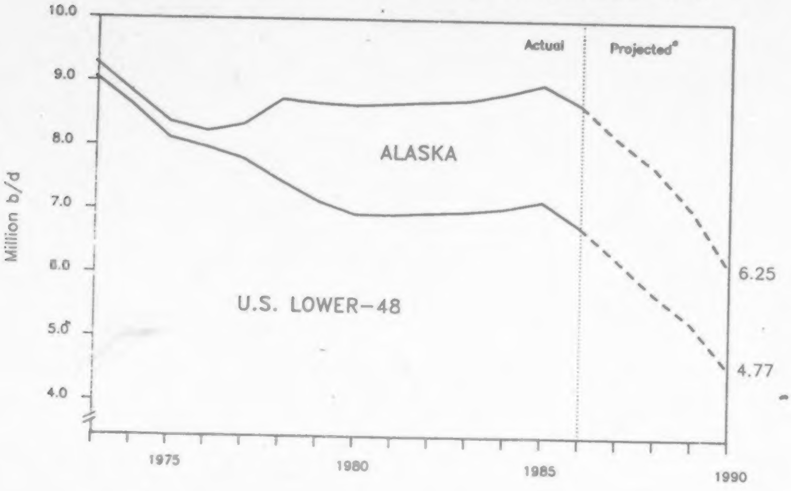
U.S. MERCHANDISE TRADE BALANCE WITH AND WITHOUT PETROLEUM IMPORTS



SOURCE: U.S. DEPARTMENT OF COMMERCE, 1985.

FIGURE 8

U.S. CRUDE OIL AND LEASE CONDENSATE PRODUCTION



*Projected assumes 16 dollars/bbl, in 1986 dollars
SOURCE: Texas Bureau of Economic Geology, 1986.

FIGURE 9

EXPLORATION EFFORTS HAVE DECLINED DIRECTLY WITH THE OIL PRICE FALL

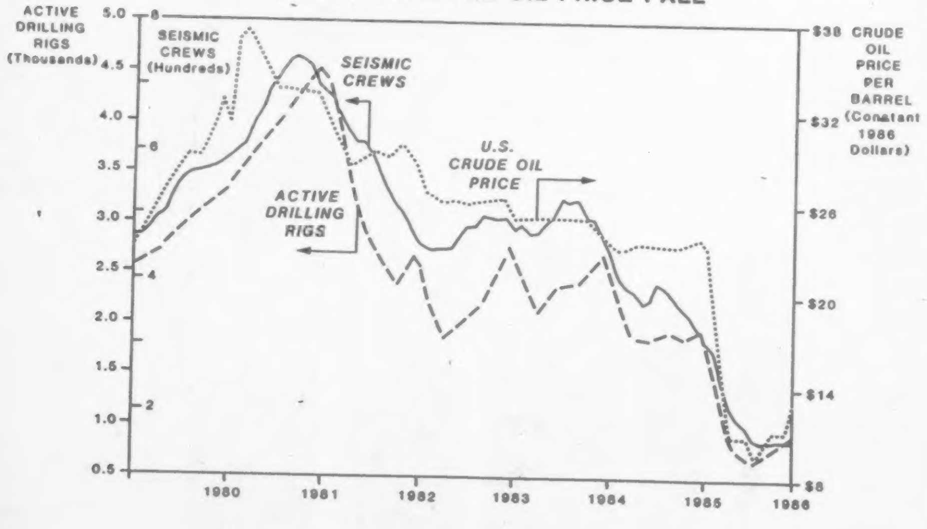
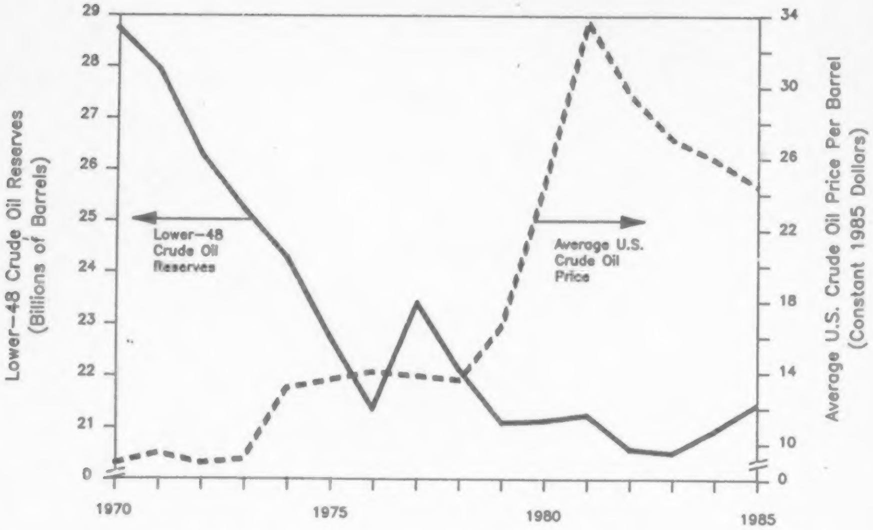


FIGURE 10

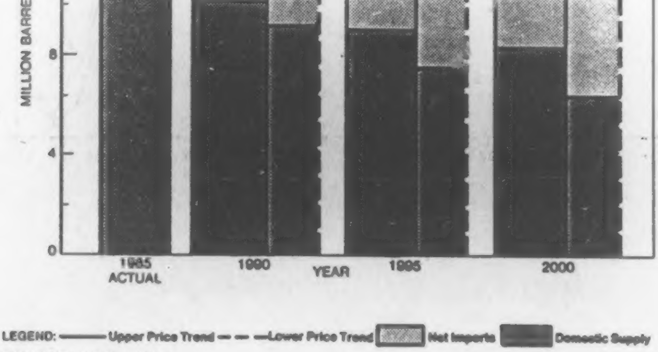
LOWER-48 CRUDE OIL RESERVES AND AVERAGE U.S. CRUDE OIL PRICE



SOURCE: API, 1970–1977 and 1986; EIA, 1977–1985.

FIGURE 11

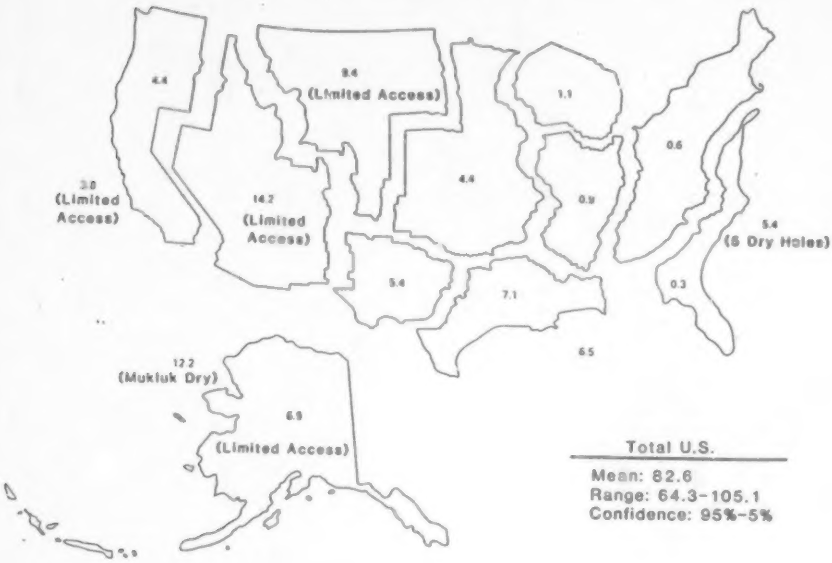
PROJECTED INCREASING RELIANCE ON IMPORTS



SOURCE: NPC, 1986.

FIGURE 12

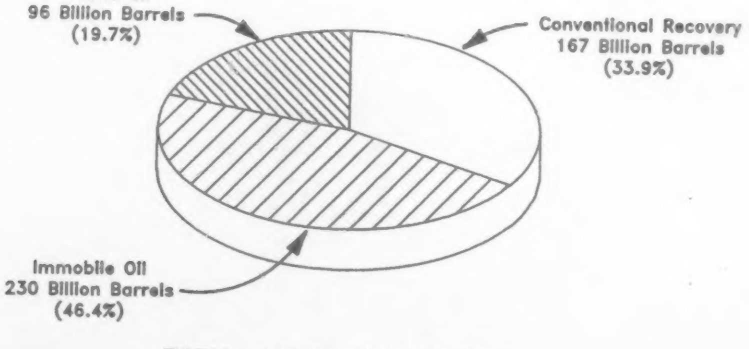
ESTIMATED UNDISCOVERED CRUDE OIL IN THE U.S.
(MEAN ESTIMATES)


4.4
9.4
(Limited Access)
1.1
0.6
3.8
(Limited
Access)
14.2
(Limited
Access)
4.4
0.9
5.4
(6 Dry Holes)
5.4
7.1
0.3
6.5
12.2
(Mukluk Dry)
6.9
(Limited Access)
Total U.S.
Mean: 82.6
Range: 64.3-105.1
Confidence: 95%-5%

Source: U.S.G.S. Circular 860, 1980

FIGURE 13

DISTRIBUTION OF KNOWN U.S OIL-IN-PLACE
(Billion Barrels)



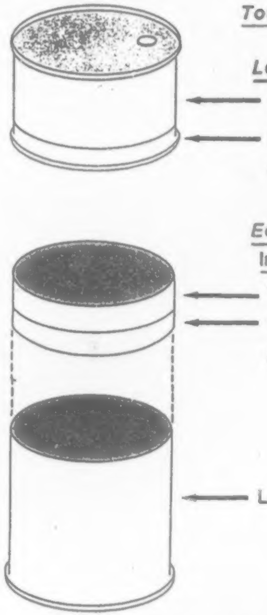
TOTAL: 493 BILLION BARRELS

SOURCE: Tertiary Oil Recovery Information Services,
Bartlesville Project Office, 1986.

FIGURE 14

RESEARCH TARGET:

Known Remaining Oil-In-Place

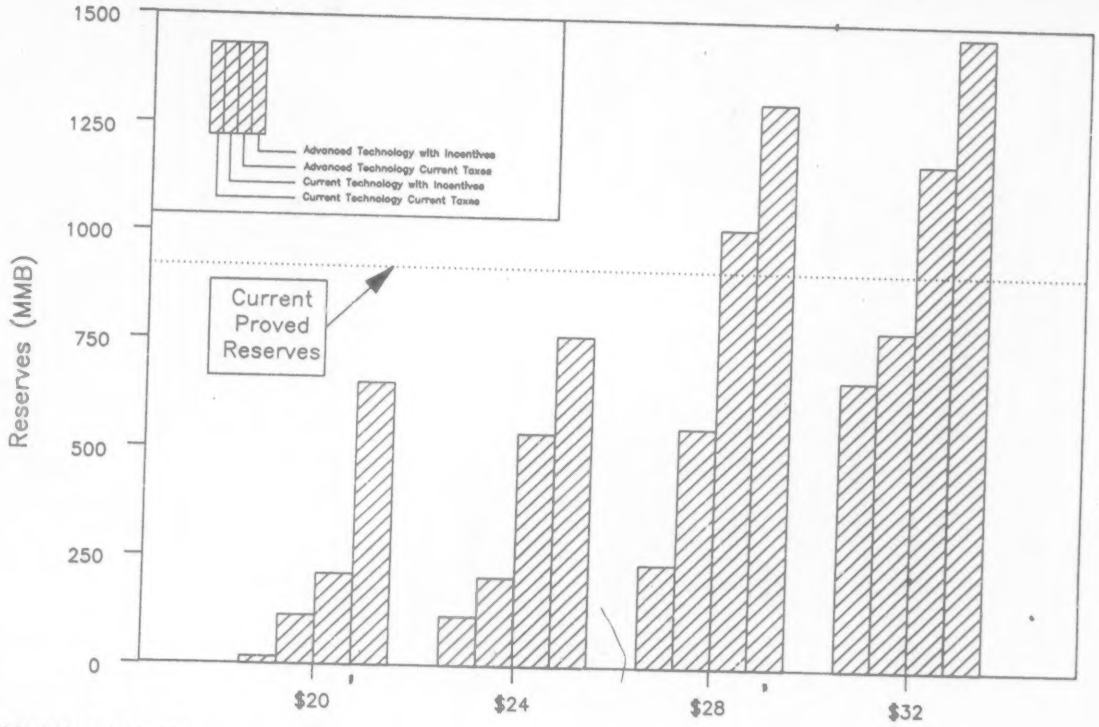


	Bill. B.	% of OOIP
Total Known Original Oil-In-Place	493	100
Less: Conventional Recovery		
Cumulative Production, 1/1/86	139	28
Proved Reserves	28	6
Subtotal, Ultimate Conventional Recovery	167	34
Equals: Remaining Oil-In-Place	326	66
Immediate EOR Research Targets		
Tertiary Recovery	45	9
Geologic Targeted Infill Drilling	45	9
Subtotal, Immediate Targets	90	18
Longer Term Target	236	48

Sources: Energy Research Advisory Board (ERAB), 1986.
General Accounting Office (GAO), 1986.
National Petroleum Council (NPC), 1984;
Bureau of Economic Geology, University of Texas at Austin (BEG), 1986
Department of Energy, Bartlesville Project Office (BPO), 1986

FIGURE 15

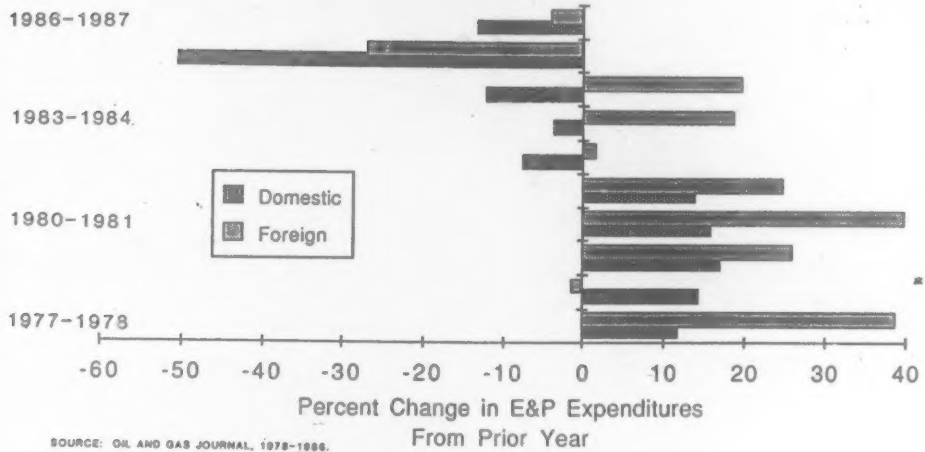
INCREMENTAL RESERVES DUE TO EOR - IMPLEMENTED vs ADVANCED TECHNOLOGY IN OKLAHOMA BY OIL PRICE FOR TWO TAX STRUCTURES



SOURCE: IOCC, 1987
Lewin and Associates, 1987

FIGURE 16

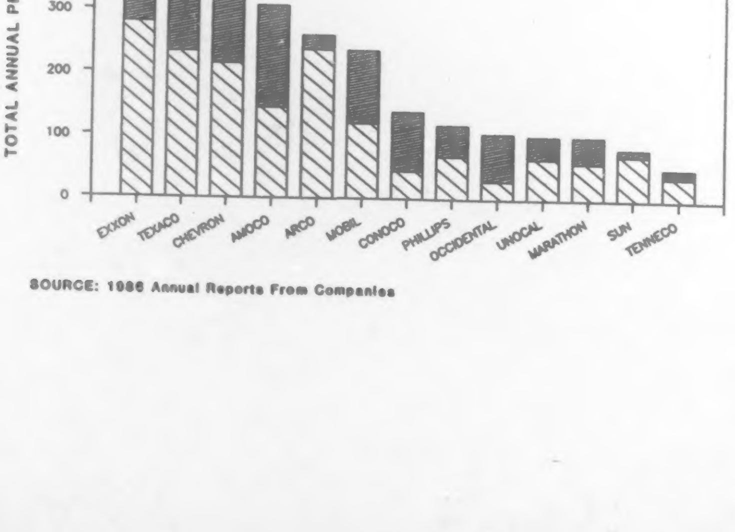
TRENDS IN DOMESTIC & FOREIGN E&P INVESTMENTS BY U.S. OIL COMPANIES



SOURCE: OIL AND GAS JOURNAL, 1978-1986.

FIGURE 17

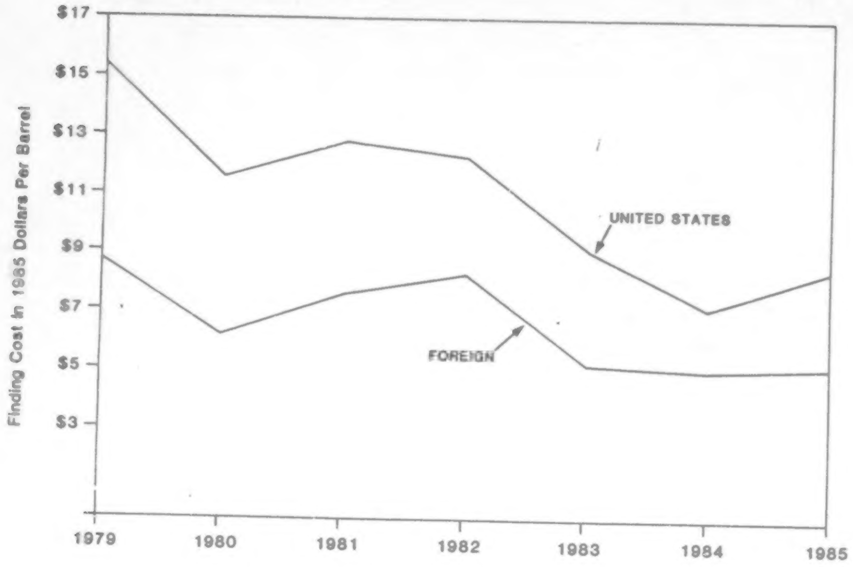
A LARGE SHARE OF THE TOTAL PRODUCTION OF U.S. COMPANIES IS FOREIGN



SOURCE: 1986 Annual Reports From Companies

FIGURE 18

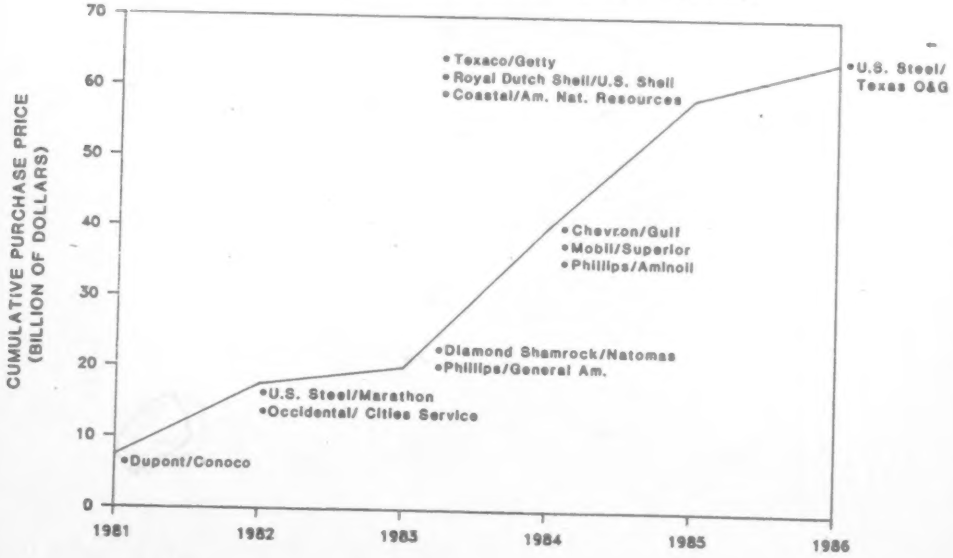
U.S. and Foreign Crude Oil Finding Cost Trends



SOURCE: John Herold Universe

FIGURE 19

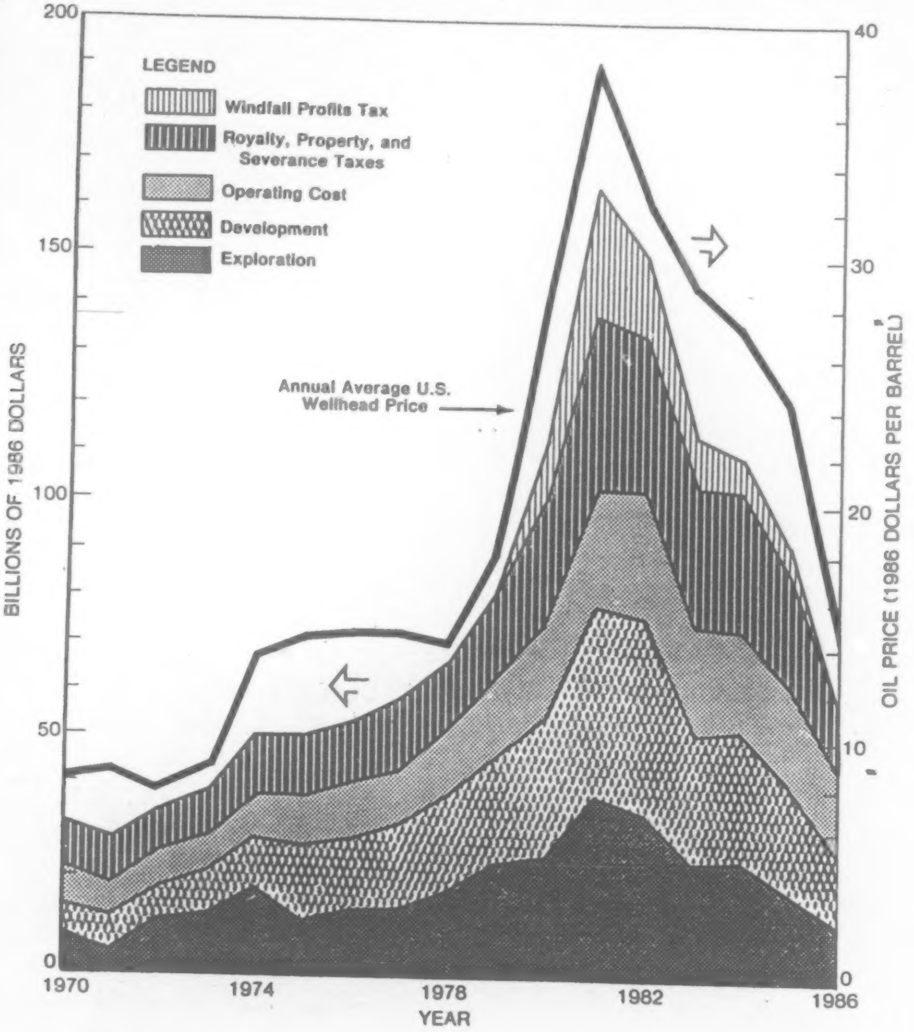
CUMULATIVE INVESTMENT IN PETROLEUM COMPANY MERGERS AND AQUISITIONS OVER $1 BILLION



SOURCE: Journal of Petroleum Technology, May 1986

FIGURE 20

FALLING OIL PRICES HAVE HAD A SEVERE IMPACT ON EXPLORATION AND DEVELOPMENT EXPENDITURES

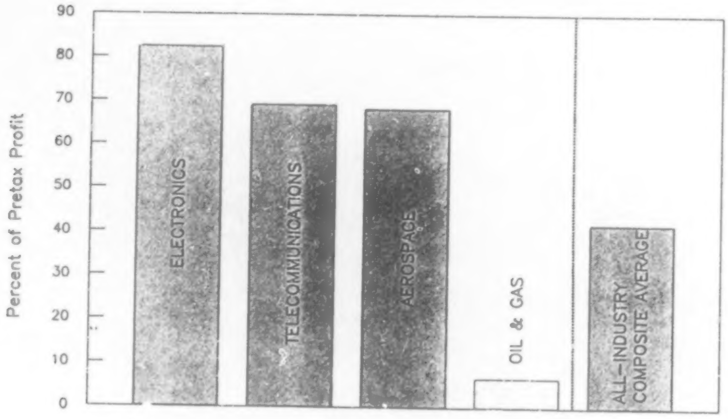


SOURCE: NPC, 1986.

FIGURE 21

1985 U.S. INDUSTRY R&D EXPENDITURES

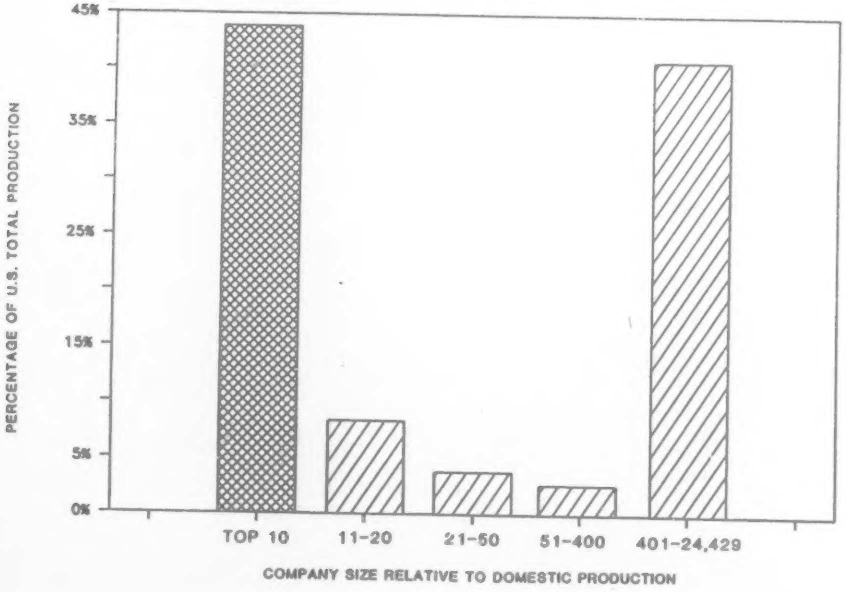
PERCENT OF PRETAX PROFIT



SOURCE: Business Week, June 23,1986.

FIGURE 22

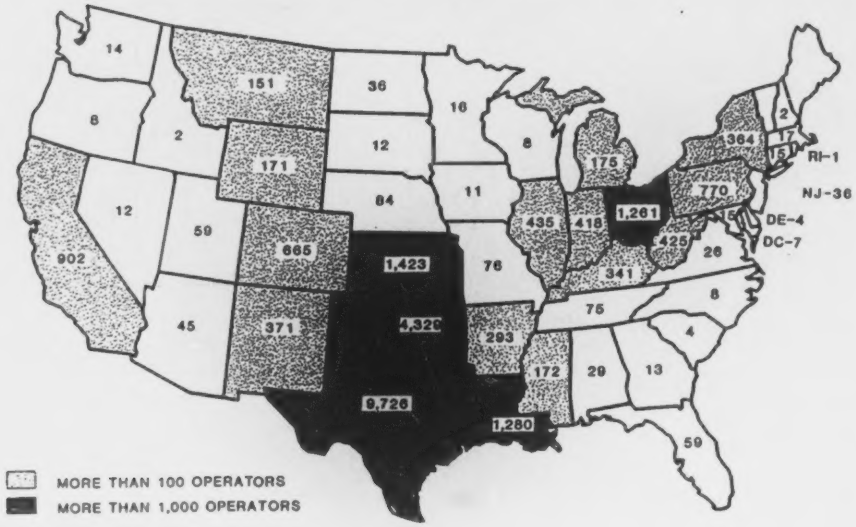
DISTRIBUTION OF U.S. 1984 PETROLEUM PRODUCTION BY COMPANY SIZE



SOURCES: OIL AND GAS JOURNAL, 1985.
ENERGY INFORMATION ADMINISTRATION, 1985.

FIGURE 23

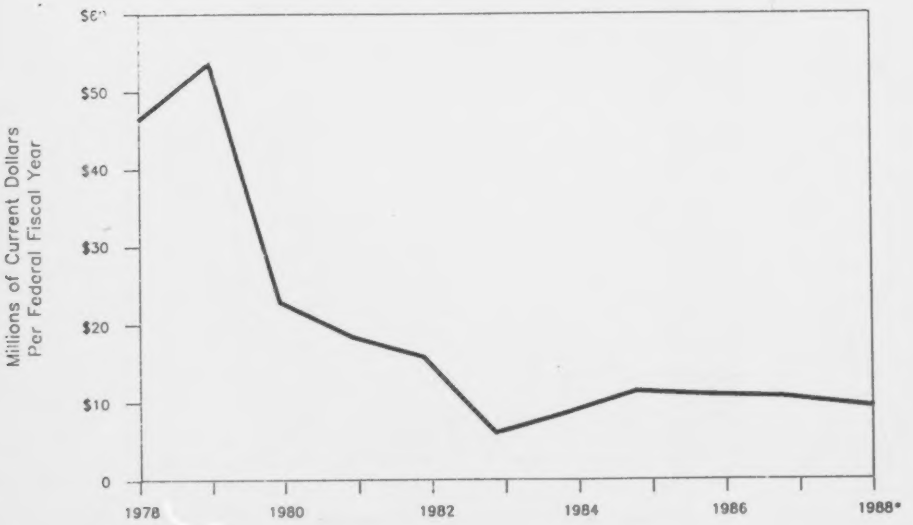
GEOGRAPHICAL DISTRIBUTION IN THE LOWER-48 STATES OF U.S. OIL AND GAS OPERATORS


14
151
36
16
6
2
12
8
2
171
17
364
15
175
RI-1
12
11
84
770
NJ-36
435
418
1,261
59
5
DE-4
665
DC-7
902
1,423
76
425
26
341
8
75
45
371
4,329
293
4
172
29
13
9,726
1,280
59
MORE THAN 100 OPERATORS
MORE THAN 1,000 OPERATORS

SOURCE: EIA, 1985.

FIGURE 24

BUDGETARY HISTORY OF FEDERAL EOR RESEARCH



*Administration Request

SOURCE: DOE Office of Budget, 1986.

FIGURE 25

ANALYSIS OF 1988 DOE BUDGET REQUEST

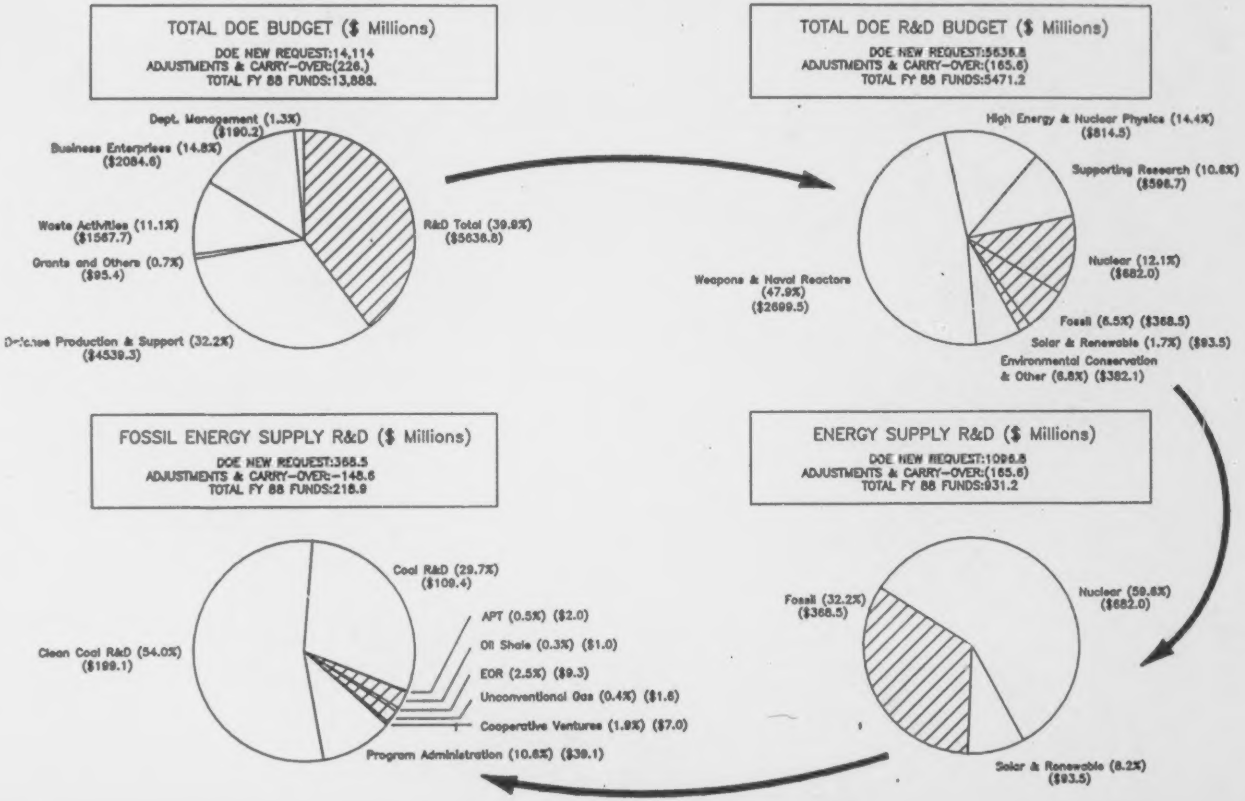
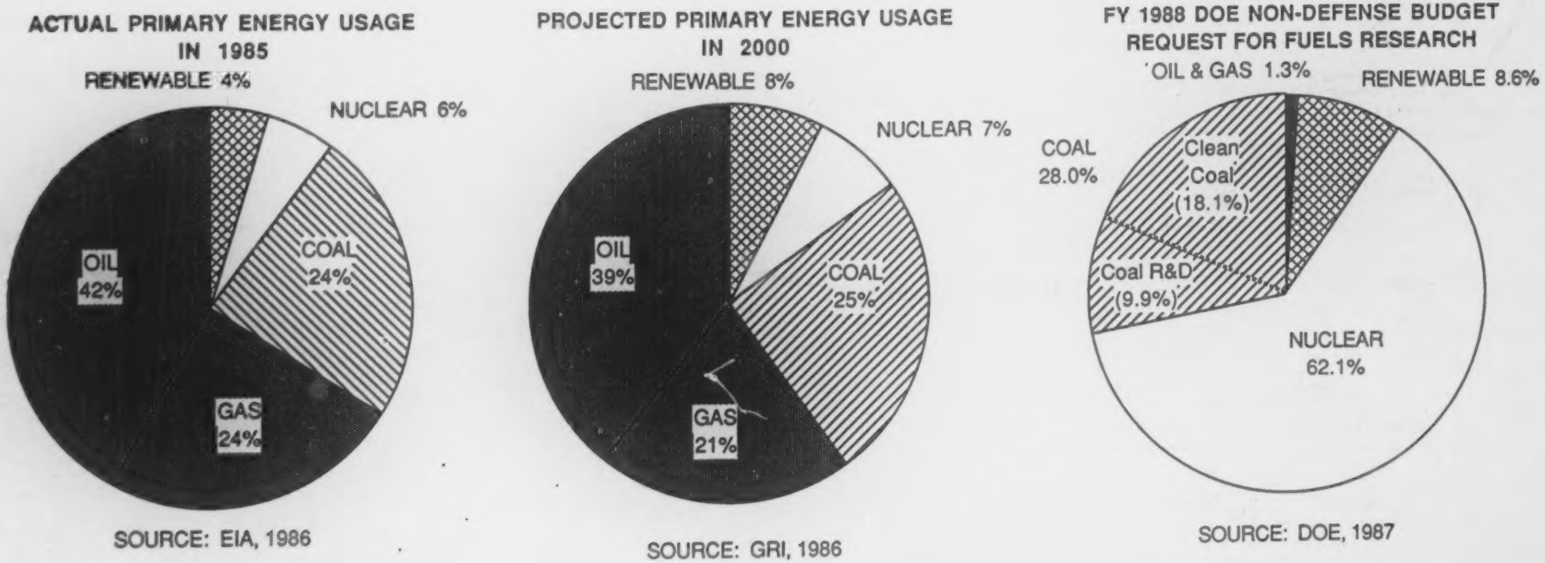


FIGURE 26

FEDERAL OIL AND GAS RESEARCH BUDGETS ARE IMBALANCED RELATIVE TO U.S. FUEL REQUIREMENTS



ACTUAL PRIMARY ENERGY USAGE IN 1985

SOURCE: EIA, 1986

PROJECTED PRIMARY ENERGY USAGE IN 2000

SOURCE: GRI, 1986

FY 1988 DOE NON-DEFENSE BUDGET REQUEST FOR FUELS RESEARCH

SOURCE: DOE, 1987

FIGURE 27

RECOMMENDED BUDGET FOR STRATEGICALLY INTEGRATED OIL AND GAS GEOSCIENCE AND EXTRACTION TECHNOLOGY R&D PROGRAM

	Appropriated		FY 1988		FY 1990
Refocused Existing Programs	FY 86	FY 87	DOE Request	Recommendation	Recommendation
• Enhanced Oil Recovery (includes tertiary recovery, targeted infill drilling, & tar sands)	11.5	11.2	9.3	17.0	27.0
• Advanced Process Technology	5.5	3.8	2.0	6.0	10.0
• Oil Shale	12.1	11.0	1.0	6.0	8.0
• Unconventional Natural Gas	8.5	8.0	1.6	10.0	20.0
Subtotal 37.6	34.0	13.9	39.0	65.0	
New Initiatives, Integrated with Above					
• Strategic planning & analysis	-0-	-0-	-0-	3.0	4.0
• Reservoir heterogeneity & subtle traps	-0-^{1}	-0-^{1}	-0-^{1}	20.0^1	25.0^1
• Advanced oil & gas geoscience technology	-0-^{2}	-0-^{2}	-0-^{2}	15.0^2	22.0^2
• Cooperative Ventures	-0-	-0-	7.0	7.0	18.0
Subtotal -0-	-0-	7.0	45.0	69.0	
GRAND TOTAL	37.6	34.0	20.9	84.0	134.0

[1] Included in prior EOR budgets, increments to be merged into future EOR budgets.

[2] Included in prior APT budgets, increments to be merged into future APT budgets.

Oil and Gas Geoscience and Production Technology Research: A National Priority for Security and Competitiveness

"*A shortage of domestic liquid hydrocarbon fuels . . . threatens the nation's energy security and international competitiveness,* according to the Energy Research Advisory Board (ERAB), the scientific policy advisory board to the Secretary of Energy. They also concluded, "*Oil and gas* are . . . top priority because of their overall dominant role in energy usage." These conclusions are echoed by the National Petroleum Council, industry advisors to the Secretary, and the Federal Interagency Task Force on Energy Security.

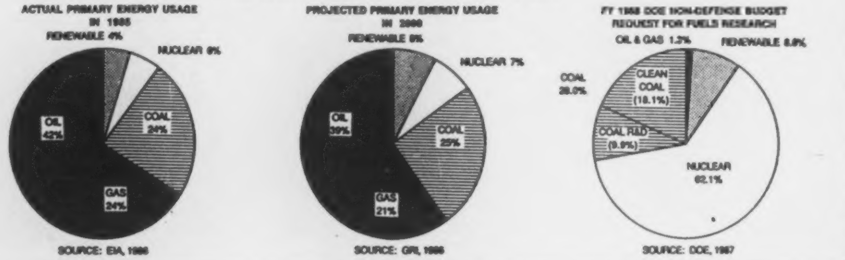
Federal R&D programs to increase U.S. oil and gas production, ERAB found, are "*unacceptably small . . . not focused on highest priority needs . . . fragmented . . . [have] no overall coordination or strategic plan . . . [are] only discipline or service oriented.*" These findings compelled ERAB to recommend that DOE:

- Redirect R&D priorities to activities that will increase U.S. oil and gas production;
- Integrate currently disparate R&D projects, especially in oil, gas, and related geoscience, into a high-level Office of Geoscience Research (OGR) to develop and manage an analytically based strategic plan;
- Establish six "centers of excellence," one in each major U.S. petroleum province, to "conduct and coordinate interdisciplinary, problem-oriented" oil and gas R&D; and
- Enact a FY 1988 budget for the integrated, refocused R&D program that is $50 million *greater* than the current level, rising to an *incremental* $100 million by FY 1990.

R&D will not, by itself, "solve" America's energy problem, but *advanced technologies* are *essential components* of *any* positive national energy policy. Incredibly, the role of advanced oil and gas technologies has been tragically underestimated. Oil and gas now provide nearly 2/3 of our primary energy requirements, and are expected to provide 60% in 2000. Yet, despite falling U.S. production, rapidly rising imports, and the likely *abandonment of 2/3 of all known U.S. oil* -- more than 300 billion barrels (bbl) -- for lack of technology to produce it, the requested funding for oil and gas research is *less than one half of 1%* of the DOE *non-defense* R&D budget.

Excluding "general science," "supporting research," "environment," "conservation," and "other" R&D, oil and gas research still accounts for *only 1.3%* (Figure 1). Independent, concerned organizations, associations, and *ad hoc* committees have joined together to endorse these ERAB recommendations strongly and to offer specific steps toward their implementation.

FIGURE 1: FEDERAL OIL AND GAS RESEARCH BUDGETS ARE IMBALANCED RELATIVE TO U.S. FUEL REQUIREMENTS



SOURCE: EIA, 1986

SOURCE: GRI, 1986

SOURCE: DOE, 1987

Insufficient U.S. Hydrocarbon Fuel Production Affects All Americans

Inadequate domestic fuel production, especially for transportation, will result in import levels that endanger the nation. America's security, economic stability, and fiscal and trade balances are at stake. Unlike other commodities, transportation fuels permeate our entire economy and way of life and have no significant near-term alternatives.

Three times in the last 14 years, the policies of Middle Eastern governments have thrown our economy into turmoil. Twice, we faced abrupt, massive price escalations that tore at the very fabric of our society. More recently, an oil and gas price collapse brought a devastating economic depression to our oil producing areas, seriously threatening overall U.S. oil and gas production capacity.

TABLE 1: OPEC PRICE RISES SUPPRESSED THE U.S. ECONOMY

Indicator	Average Annual Growth Rates (%) 1960-1973	Average Annual Growth Rates (%) 1974-1985
Real GNP	3.9	2.3
Real Consumption	4.1	2.7
Real Investment	5.5	1.8
Industrial Production	5.2	2.3
Consumer Price Index	2.3	7.6
GNP per Employee	1.9	0.3
	Annual Averages 1960-1973	**Annual Averages 1974-1985**
Treasury Bill Rate (%)	4.4	8.6
Unemployment Rate (%)	4.9	7.5
Unemployed Workers (millions)	3.8	7.8
Trade Balance (billion dollars)	3.3	-39.4
Federal Deficit (billion dollars)	5.5	86.8

NPC, 1987.

Comparing U.S. national economic indicators before and after OPEC price shocks reveals the pervasive impacts of oil price increases on our economy (Table 1). Today, each 1% reduction in GNP translates into a $40 billion reduction in U.S. output. Each 1% rise in unemployment means the loss of more than a million jobs. These are risks that affect all Americans.

The "Crash of '86": A Set-up for a Repeat of the '70's?

Last year's oil price collapse emphasized our vulnerability to foreign government policies. The Saudi decision to expand its market share -- driving out high-cost production by dumping low-cost oil on the international market -- devastated U.S. petroleum production capacity. Even though the U.S. imported only 1% of its total oil requirement from Saudi Arabia (only 8% from all of OPEC, in fact), we suffered a *substantially larger relative loss* in production. Excluding the very special circumstances of Alaska and the offshore, U.S. Lower-48 production *fell 750,000 bbl/day* in 1986 -- *a 12% decline in one year.*

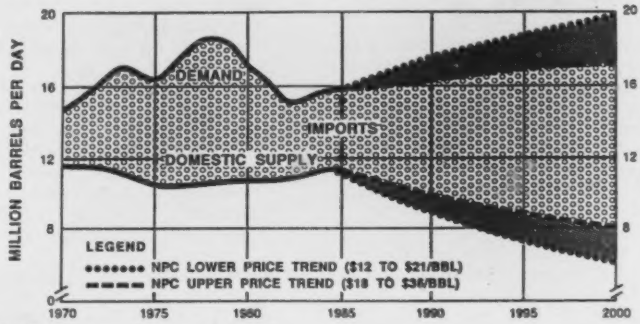
Total U.S. energy independence is not an attainable goal, but the nation must maintain its liquid fuels production capacity as a prerequisite to assure its goal of "adequate petroleum supplies at reasonable prices." At a time when the need to maintain our productive capacity is greatest, our ability to do so is at its lowest point in decades.

More than 40,000 "stripper wells" were abandoned last year, with many more to follow. The active rig count is the lowest since 1940 when rig count records began. The seismic crew count is at its 1935 level. The oil and gas extraction labor force is 60% of its 1982 level. More than 25% of professional petroleum geologists are unemployed -- in some regions, 35%. Undergraduate enrollment in geology and petroleum engineering at the 10 leading universities is 29% of its 1981 level.

Meanwhile, the low cost of fuels has stimulated demand. Consumption rose 5% in 1986. The supply-demand gap was filled, of course, by imports. Total imports grew by 31%, with OPEC accounting for two-thirds of the total increase. Each time their capacity utilization exceeded 80% in the 1970's, OPEC was able to raise prices dramatically and maintain them at high levels for years. If recent trends continue for 2-4 years, OPEC will again reach 80% capacity utilization while the U.S. will import more that 50% of its requirements, compared to its previous high of 48% in 1977 (Figure 2).

Dependence on high levels of imported oil is unacceptable to a nation seeking balance in orderly international trade. Subtraction of oil imports would have given the U.S. a *positive merchandise trade balance* until 1983. In the last two months of 1986, our oil import "habit" caused the *ex-*

FIGURE 2: LOWER OIL PRICES INCREASE U.S. RELIANCE ON IMPORTS



SOURCES: EIA, 1986; NPC, 1987.

port of $100,000,000 per day from our economy to those of countries who sell us oil. A cash drain of this magnitude severely restricts America's quest to regain international competitiveness.

These are issues that affect *all Americans and the nation as a whole*, not just specific regions or industries. They are, consequently, *public issues*, warranting national concern and prudent federal policies.

The U.S. Resource Base is Massive, But Requires Advanced Technology

We have proved reserves of 28 billion bbl of oil and 193 trillion cubic feet (Tcf) of gas (equivalent to 33 billion bbl of oil), although some of these reserves may have been abandoned prematurely during the past year. These reserves are roughly seven to ten years supply at current production rates. Beyond these reserves, we have vast quantities of oil and gas in known locations, but their *recovery is constrained by the lack of geological understanding and the geoscientific and extraction technologies to produce them.* Further, we have domestic resources yet to be discovered but *these, too, will increasingly require new, more advanced technologies.*

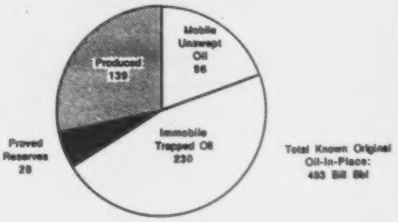
Known Incremental Oil Resources

Despite the need for stable or increasing domestic production, we are *abandoning more than 300 billion bbl of oil -- 2/3 of all oil discovered in the U.S. to date* -- in ***known*** reservoirs (Figure 3).

This known U.S. oil, bypassed or trapped in the rock after available technology has been efficiently applied, is of two types:

- Nearly 100 billion bbl are mobile but unswept by conventional processes, part of which would be producible if *geologically targeted infill drilling technologies* can be developed to locate, contact, and flood the oil properly.
- About 230 billion bbl are immobile, trapped in the reservoir rock by viscous and capillary forces, part of which can be displaced and mobilized if continued advances are made in *tertiary recovery technologies.*

FIGURE 3: TWO THIRDS OF KNOWN U.S. OIL WILL BE ABANDONED
(BILLIONS OF BARRELS)



SOURCE: SPO, 1985

While only a portion can be recovered, it could be significant. ERAB estimated the total at ***more than 100 billion bbl.*** Estimates by other expert groups are in the same range (Figure 4). If the required technologies were developed and economic conditions permit them to be applied, they could ***more than quadruple U.S. oil reserves***, allowing U.S. production to continue at ***the current level for the next 30-40 years.*** Even that would still leave more than 200 billion bbl as the target for still more advanced technologies.

Known Incremental Gas Resources

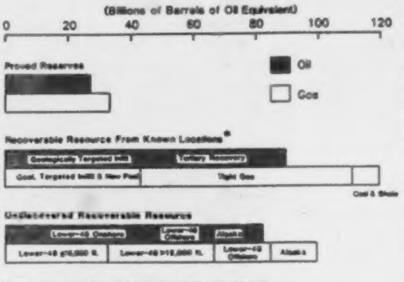
For natural gas, as with oil, there is a significant potential for geologically targeted infill drilling to drain known reservoirs more thoroughly, encounter undrained "lenses" of gas, and develop more fully the deeper reservoirs in known fields. Collectively these would account for 300 Tcf or more. Beyond this, the known "unconventional" natural gas resources -- tight gas formations (the largest resource), and gas from coalbeds and shales -- could add up to nearly 440 Tcf. Together, these known gas sources could almost quadruple current gas reserves. But, as with the known oil resource, producing the known gas resource requires significant advances in geoscientific and extraction technologies.

Undiscovered Oil and Gas Resources

Undiscovered, recoverable U.S. oil and gas resources are also significant -- more than 80 billion bbl of oil and nearly 600 Tcf of gas (100 billion bbl of oil-equivalent). Nearly half of the discoveries are expected from the onshore areas of the Lower-48 states, at depths shallower than 15,000 feet. But, in terms of oil and gas exploration, this is the most mature area in the world.

Between 1970 and 1983, the portion of newly discovered fields larger than 1 million bbl of oil (or equivalent gas) fell from 27% to 2% of new discoveries, despite a vast increase in drilling. This indicates that much of the oil and gas left to be discovered in the Lower-48 onshore areas will be found in small or subtle traps that require much more sophisticated geological and geophysical technologies to locate and much more efficient extraction technologies to be economically viable.

FIGURE 4: U.S. RECOVERABLE OIL & GAS RESOURCE BASE



Sources: USGS, 1989; GRI, 1989; DOE, 1989; TBEG, 1989; EIA, 1989.
*Estimated at approximately $30/bbl or bbl-equivalent.

The other new exploration opportunities will rely on technology advances even more. Deep gas is a potentially attractive resource but, given present technology, it will cost nearly four times the current price. Deep-water offshore and Arctic areas will also require improvements in technology to be cost-competitive. Beyond these resources, "new" forms of gas, e.g., methane hydrates, abiogenic and subducted gas, have yet to be proven but, given new technologies, these too could contribute to the nation's domestic fuel supplies.

Integrated R&D Is Required

Geoscience and extraction technology R&D for oil and gas must be considered as an integral whole for at least four reasons: (1) Nearly all the basic geological and geophysical research and technologies are equally required by and equally applicable to both oil and gas resources. Many of the field development, drilling, stimulation, and modeling technologies are equivalent, although special adaptations are needed for specific resources and specific reservoir settings. (2) The same community of researchers in industry, universities, and government laboratories addresses both oil and gas problems. (3) The same community of producers, service companies, and consulting engineers and geologists will apply the new technologies as they emerge from R&D. (4) Numerous "scales" (basin, reservoir, flow unit, pore, and microscopic) must be integrated and interpreted as a whole to design effective development programs. Such integration requires that the research be ***interdisciplinary*** and *oriented to solving specific prob-*

lems of increasing domestic oil and gas production from specific resources in the near and longer term. Serious oil and gas research to improve the nation's capacity for domestic production of vital transportation fuels must, unquestionably, be interdisciplinary and integrated to address the right communities and to exploit the available technical synergies.

Why is Federal Action Required?

First, U.S. *finding and lifting costs are substantially higher* than worldwide costs. Therefore, any price collapse disproportionately reduces U.S. productive capacity.

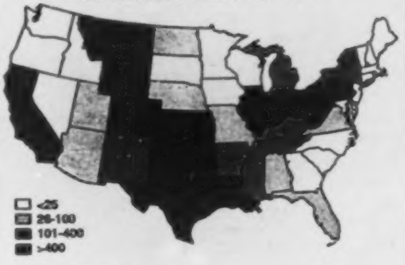
Second, U.S. in-ground *reserves have been undervalued*, so that merging into U.S. reserves has become more attractive than finding new reserves or risking capital in R&D for "high-tech" ventures. This seems the case regardless of adverse effects on debt burdens or capital structures.

Third, *reductions in scientific personnel and university grants* suggest a decline in U.S. oil and gas R&D investments of more than 1/3 in the last year alone. Sustaining the talent pool of geologists and engineers for advanced technology applications and for training future geologists and engineers is a cost-effective hedge against future price or supply crises.

Finally, *the vast majority of U.S. producers have no R&D capabilities*. More than half of U.S. oil and gas is produced by independents ranked below the 20 largest companies. These firms, numbering more than 24,000 in 1985 (but probably fewer after the price collapse), are widely dispersed across all the nation's producing regions (Figure 5).

Only the states and the federal government can meet this public responsibility. Special private-state-federal petroleum research consortia and institutes exist in Texas, Oklahoma, California, New Mexico, Illinois, Kansas, Colorado, Wyoming, and other states. In addition, state geological surveys and conservation agencies are working with operators to maximize production and some states have passed or are considering special incentives for petroleum research and/or applications of advanced oil and gas technologies. Due to severely reduced revenues, however, these efforts are necessarily limited. Therefore, as the ERAB evaluation demonstrated, the requirement for a viable federal R&D effort is urgent.

FIGURE 5: GEOGRAPHICAL DISTRIBUTION OF U.S. OIL & GAS OPERATORS



SOURCE: EIA, 1985.

A tragic imbalance has emerged between the vital role of oil and gas in fueling the U.S. society and economy and the federal commitment to research to sustain U.S. oil and gas production. *A budget request of only $13.9 million for oil and gas research out of a total DOE FY 1988 request of $14 billion is not a sound energy policy.* Our recommendations move toward redressing this imbalance.

Recommended Implementation Steps

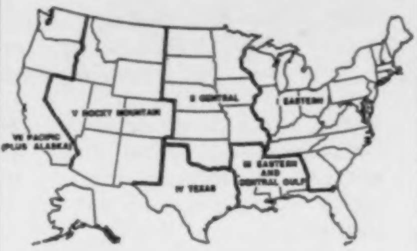
We endorse the general recommendations of ERAB. *Regardless of what other energy policies the nation may choose, none can solve the problem unless complemented by increasing our ability to produce more of our domestic resource at reasonable costs. This requires enlightened research and development.* We recommend the following as steps toward implementation of these recommendations:

- Establish an Office of Geoscience Research (OGR) as a unit of the DOE Fossil Energy Program, reporting directly to the Assistant Secretary, and locate an implementation office in the "oil patch" with the *status of an energy technology center*.

- Assign to OGR in FY 1987 all existing DOE oil and gas geoscience and production technology programs. OGR would perform detailed analyses of the impact on the nation's production potential of each resource-technology-R&D combination, leading to a comprehensive, integrated strategic plan used to direct the program. The analyses and plan would be updated biennially and submitted to Congress.

- Make the goal of the recommended R&D program to develop the basic understanding and technology necessary to produce at least:
  - *90 billion bbl of incremental oil from currently known reservoirs;*
  - *700 trillion cubic feet of gas from currently known gas formations; and*
  - *100 billion bbl of oil and oil-equivalent gas from undiscovered reservoirs.*
- Establish in FY 1987 oil and gas geoscience and recovery technology research "centers of excellence" in six major U.S. oil and gas provinces (Figure 6) at leading petroleum research universities, consortia of such universities, or consortia of these universities, state geological surveys and/or National Laboratories. The majority of the appropriated incremental funds will be expended through these centers, in cooperation with private consortia or individual companies willing to provide additional funding, and with the states.

FIGURE 6: ERAB'S SUGGESTED SIX OIL & GAS PRODUCING PROVINCES



- Appropriate the federal funds as displayed in Table 2 for FY 1988, to complement and extend existing federal efforts.
- Encourage the formation of industry research consortia and the participation of Federal government in them, insofar as they contribute to the national, integrated strategic plan.

Commitment to these implementation steps, organizationally in FY 1987 and fiscally in FY 1988, will begin to restore a balance between federal R&D priorities and the actual energy requirements of the nation, now and into the future -- to the enhancement of national security and competitiveness.

TABLE 2: RECOMMENDED BUDGET FOR STRATEGICALLY INTEGRATED OIL AND GAS GEOSCIENCE AND EXTRACTION TECHNOLOGY R&D PROGRAM

	Appropriated		FY 1988		FY 1990
Refocused Existing Programs	FY 86	FY 87	DOE Request	Recommendation	Recommendation
• Enhanced Oil Recovery (includes tertiary recovery, targeted infill drilling, & tar sands)	11.5	11.2	9.3	17.0	27.0
• Advanced Process Technology	5.5	3.8	2.0	6.0	10.0
• Oil Shale	12.1	11.0	1.0	6.0	8.0
• Unconventional Natural Gas	8.5	8.0	1.6	10.0	20.0
Subtotal	37.6	34.0	13.9	39.0	65.0
New Initiatives, Integrated with Above					
• Strategic planning & analysis	-0-	-0-	-0-	3.0	4.0
• Reservoir heterogeneity & subtle traps	-0-[1]	-0-[1]	-0-[1]	20.0[1]	25.0[1]
• Advanced oil & gas geoscience technology	-0-[2]	-0-[2]	-0-[2]	15.0[2]	22.0[2]
• Cooperative Ventures	-0-	-0-	7.0	7.0	18.0
Subtotal	-0-	-0-	7.0	45.0	69.0
GRAND TOTAL	37.6	34.0	20.9	84.0	134.0

[1] Included in prior EOR budgets, increments to be merged into future EOR budgets.

[2] Included in prior APT budgets, increments to be merged into future APT budgets.

ENDORSEMENTS TO DATE
(Wednesday, April 1, 1987)

NOTE: *The first draft of this statement was circulated on Thursday, March 19, 1987. The statement remains open for further endorsements at this time and several organizations have it under review at this time.*

We, the undersigned organizations and individuals, endorse the findings and recommendations of the Energy Research Advisory Board regarding federal oil and gas discovery and recovery technology R&D and encourage adoption of the ERAB recommendations and the implementation steps advocated in the attached position paper.

Organizations of Public Officials

- *Interstate Oil Compact Commission*, the organization of the governors of 29 oil and gas producing states and 6 associate member governors.
- *Southwest Regional Energy Council*, the organization of the legislatures of the oil and gas producing states.
- An *ad hoc committee* of the *state geologists* from *30 states*.

Industry Associations and Organizations

- *Gas Research Institute*, research arm of the gas industry.
- *Interstate Natural Gas Association of America*, association of the interstate gas pipeline industry.
- *Association of Oil Well Servicing Contractors*
- Independent Petroleum Association of New Mexico
- New Mexico Land Man Association
- Four Corners Gas Producers Association
- International Association of Drilling Contractors of New Mexico

Professional and Academic Organizations

- *American Association of Petroleum Geologists, professional society of petroleum exploration and development geoscientists.*
- Roswell Geological Society
- An *ad hoc* committee of *professors of geology* and *petroleum engineering* from:
  - University of Calif./Berkeley
  - Colorado School of Mines
  - University of Houston
  - University of Illinois/Chicago
  - University of Kansas
  - Leland Stanford Jr. University
  - Louisiana State University
  - New Mexico Institute for Mining & Technology
  - University of Oklahoma
  - Pennsylvania State University
  - University of Southern Calif.
  - University of SW Louisiana
  - University of Texas at Austin
  - Texas A&M University
  - University of West Virginia
  - University of Wyoming
- An *ad hoc* committee of *former directors of oil and gas research in the public and private sectors* and *leading petroleum experts*. (*Note*: The persons listed below endorse these positions *as individuals* and *not* as representatives of their former affiliations. The names of the former employers are listed for *indentification purposes only* and *do not imply endorsement by these organizations*):
  - John Ball, Director of DOE Bartlesville Energy Technology Center
  - R.J. Blackwell, Exxon
  - Lincoln Elkins, Sohio
  - Lloyd Elkins, Amoco
  - Ted M. Geffen, Amoco
  - Claude Hocott, Exxon
  - L. Wally Holm (Unical)
  - Harry Johnson, Deputy Assistant Administrator, ERDA
  - Marvin L. Katz, ARCO
  - T.W. Nelson, Mobil
  - Fred Poettmann, Marathon
  - Edward E. Runyon, Past President, Society of Petroleum Engineers (SPE); and Past President, American Institute of Mining, Metallurgical, and Petroleum Engineers, (AIME)
  - R.V. Smith, Phillips
  - Philip White, Amoco, and Assistant Administrator for Fossil Energy, ERDA

COMPONENTS OF AN INTEGRATED OIL AND GAS GEOSCIENCE AND EXTRACTION TECHNOLOGY R&D STRATEGY

While developing the components and priorities for the recommended strategic plan will require both analysis and expert judgment, the following are suggested components:

Reservoir discovery, especially of subtle traps and in frontier areas, requires sophisticated understanding of the deposition, diagenesis, and tectonics of whole basins and their principal subdivisions. Basin studies, including three-dimensional mapping, large-scale geological interpretation, and mathematical models integrating data from outcrops and other surface features, available wells, remote sensing (including biosphere-geosphere interactions), improved seismic measurement and interpretation, etc., should reduce the costs and risks of exploratory drilling and provide the framework for more detailed reservoir description.

Reservoir access is generally obtained by drilling wells. Despite the advanced state-of-the-art of drilling technology for conventional wells, improvements are required for future exploration of the very deep onshore and very deep water offshore formations. Downhole telemetry, in-situ "measurement-while-drilling," and attitude control of deviated and horizontal wells could improve the speed, efficiency, and effectiveness of drilling.

Reservoir description and geologic modeling are the highest priority research areas. Inadequate understanding and prediction of heterogeneities and flow paths within the reservoir account for more failures of projects than any other cause. Advanced measurement, interpretation, and geological and reservoir modeling must integrate data from several "scales of observation," ranging from basin level (above) to the sub-pore level, into a scale practical for engineering design. Improvements in measurement include enhanced coring, logging, interwell three-dimensional seismic, rock and fluid sampling, and advanced tracer testing techniques for reservoir description. Using existing data from thoroughly documented reservoirs and modern geological interpretation, "type" reservoirs may be defined to predict spatial distributions of remaining oil and gas based on deposition, tectonics, and field development history. Additional tracer studies and selective test drilling could provide the data to test and validate these approaches.

Extraction process design, prediction, and evaluation will be specific to the respective resources and their reservoir settings. Many (but not all) of the basic mechanisms for displacing and mobilizing oil in tertiary recovery are understood in the laboratory but not at the well or reservoir scale. While some further work in fluid-fluid and rock-fluid interactions is needed, understanding at the scale of well patterns or whole reservoirs (including their heterogeneities) can yield greatest benefits in production. Fracturing to enlarge the surface area of pressure sinks in low permeability oil and gas reservoirs and/or increasing injectivity and sweep of injected fluids still remains more art than science. Overcoming or capitalizing on the effects of permeability variation and gravity segregation to improve sweep in the reservoir remains a major challenge. Affecting all these issues is the inability to predict accurately through mathematical modeling the performance of alternative engineering designs. Accurate geological and engineering data bases and reservoir description models are prerequisite to development of simulation models tending to cost-effective production. Such models, testable only in actual applications, define alternative interpretations of project results by which critical uncertainties can be defined to establish new priorities for subsequent R&D.

Each of these phases of research and technology development will require the use of state-of-the-art techniques of computing, knowledge-based systems ("artificial intelligence"), direct measurement, and data reduction and interpretation. Development of a prioritized strategy for integrating these efforts toward maximizing production of U.S. resources is a major task requiring extensive, nationally representative data bases and "systems models." We regard integrated analysis and strategy development the first orders of business for the recommended Office of Geoscience Research in Fiscal Year 1987 and a continuing obligation to be satisfied through biennial updates of the analysis and strategy.

RECOMMENDED BUDGET FOR STRATEGICALLY INTEGRATED OIL AND GAS GEOSCIENCE AND EXTRACTION TECHNOLOGY R&D PROGRAM

	Appropriated		FY 1988		FY 1990
Refocused Existing Programs	FY 86	FY 87	DOE Request	Recommendation	Recommendation
• Enhanced Oil Recovery (includes tertiary recovery, targeted infill drilling, & tar sands)	11.5	11.2	9.3	17.0	27.0
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• Cooperative Ventures	-0-	-0-	7.0	7.0	18.0
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[1] Included in prior BOR budgets, increments to be merged into future BOR budgets.

[2] Included in prior APT budgets, increments to be merged into future APT budgets.

STATEMENT OF THE SOLAR ENERGY INDUSTRIES ASSOCIATION

INTRODUCTION

While U.S. petroleum imports climb precipitously and contribute to the staggering U.S. trade deficit, U.S. policymakers remain complacent about the dire need to develop a national energy policy. The United States is the only industrialized country without an aggressive energy strategy to protect our economy and national security.

While the U.S. cuts its energy research budgets for both conventional and renewable energy technologies, our international competitors are increasing their federally-sponsored R&D in great anticipation of controlling the high-technology world energy markets in which the U.S. appears to have little interest. However, while Washington seems preoccupied with "competitiveness" issues, energy issues are somehow shuttled to the side of the trade discussions.

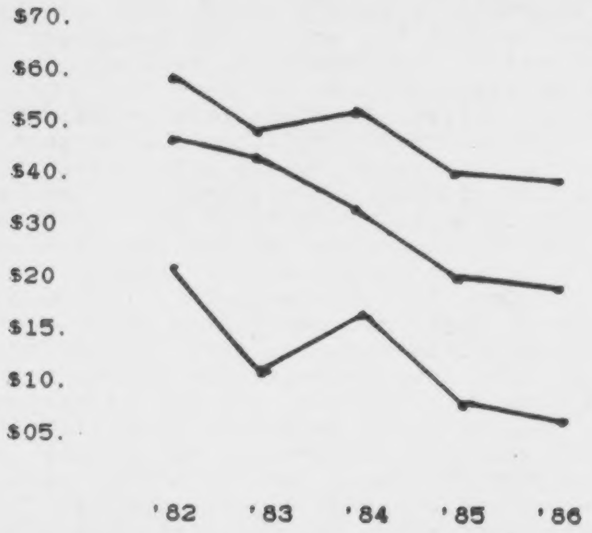
In 1985, the U.S. Department of Energy released a "white paper" which related that the United States, between 1975 and 1985, spent $4 billion dollars for solar and renewable energy R&D, and $2 billion for tax incentives. As a result of this R&D, the report states further, over $36 billion of petroleum was displaced by solar and renewable energy applications resulting from our government's effort. In 1987, the United States has a choice to maintain its minimal solar energy effort or to reliquish its lead to our international competitors who are preparing to control the potential multi-billion dollar world market in the 1990's.

The U.S. solar industry asks the Congress to take notice of our young American industry and give us a chance to reach our potential to provide domestic energy to offset petroleum imports in an environmentally benign fashion. Most importantly, solar energy will be an energy resource of the future, and the real question is which countries will lead technologically and thus reap the market benefits of the future?

BUDGET REVIEW

Before I begin a technological review of the U.S. Department of Energy (US-DOE)R&D budget, I have shown in a graph below the decrease in the U.S. solar energy (ie. solar buildings, solar thermal power and photovoltaics) budget over a five year period:

TRENDS IN FEDERAL SOLAR R&D



Side axis: Dollars are expressed in millions of dollars.

Bottom axis: The top line is US-DOE photovoltaics budget, the middle line is US-DOE solar thermal power budget, and the bottom line is US-DOE solar buildings budget.

As you can see, the federal commitment for solar has dropped to a point where if the budget goes any lower, the U.S. research effort would be meaningless. The United States must maintain level funding and work with the Office of Management & Budget (OMB) to incorporate the U.S. solar R&D funding effort in a two-year funding cycle to insure some kind of stability. Otherwise the small U.S. solar R&D effort will be subsumed by those of our competitors before the 1990's.

THE US-DOE SOLAR PROGRAM

I have attached to the testimony a draft set of recommendations which the industry will present in a modified version to the U.S. Congress at the appropriate Congressional appropriations hearings later this month. The following capsulets of the three basic solar industry R&D programs including the premier national laboratory, the Solar Energy Research Institute (SERI), and the international program are presented below.

International: The current US-DOE program was funded in FY'87 at $.8 million and industry in FY'88 is recommending an increase to $1.5 million. Most of this appropriation goes to fund the activities required under P.L. 98-370 which established the federal interagency working group chaired by the U.S. Department of Energy called" The Committee on Renewable Energy Commerce & Trade (CORECT)". Since a good portion of solar sales are export sales, these activities providing information, federal agency coordination, and development of generic market activities are absolutely vital. The U.S. Departments of Energy and Commerce, as well as the Agency for International Development deserve much credit for the success so far. And because of this success, this small program should be broadened to be more effective. Activities for 1987 include the hosting of a PV in Development Conference in May for potential buyers from multinational aid and development organizations as well as other marketing programs. The FY'88 funding year will provide crucial assistance in developing greater support among banking & financial institutions for renewable energy exports and key market promotion activities in the Caribbean Basin and the Pacific Rim nations.

PHOTOVOLTAICS: In FY'87 PV R&D was funded at $40.4 million, and the industry in FY'88 recommends $43.1 million plus an extra $7.5 million for a broad-based utility application (PV-USA). As stated in SEIA's earlier testimonies to this Subcommittee, over 75 percent of the world's population does not have access to electricity. The World Bank is directing most of its $6 billion per year of energy funding towards diesel electric generation for the developing world. However larger proportions of international bank financing are moving towards renewable energy, particularly photovoltaics. Although the costs of photovoltaics have come down ten fold over the last decade, PV technology is still higher than conventionally-generated electricity today. However, most in the industry believe that PV's will become completely competitive in 1990's in the U.S. energy markets which are lower than the rest of the world.

An essential ingredient in whether PV's will meet these cost reduction estimates relies on the status of the current US-DOE research program. The move from single and multicrystal silicon to amorphous silicon deposition has the potential to significantly bring down costs. The amorphous silicon and thin film research efforts are directed towards this end. The other key component to meet cost and reliability requirements are to better integrate the PV technology with power conditioning equipment and the end-use equipment. The collector research and technology diffusion line items assist industry in this regard.

The US photovoltaics industry held 80 percent of the world market just four years ago. Today, the US PV industry has barely half the market while the Japanese are reaching for world dominance in the technology. In 1985, the Japanese for the first time surpassed the United States in photovoltaic module production. Only a solid R&D program which continues its high-efficiency and fundamental research will maintain the US technological lead. The core program, as recommended by the US industry must be maintained at a $43.1 million for FY'87 if the US is to maintain its pre-eminence in this high technology of great promise.

In addition to the core $43.1 million, the industry is recommending an additional $7.5 million for a set of US utility applications throughout the United States to monitor technology in the real world. The newest PV technology and power conditioning equipment, must have the necessary system testing around the nation before PV technology can be procured by the utility industry when cost effective in the mid 1990's.

SOLAR BUILDINGS: Over 36 percent of our nation's energy is used to heat or cool space or water for buildings yet the greatest amount of R&D monies goes towards electric generation. In FY'87 the US-DOE solar buildings program was funded at $5.9 million and in FY'88 the U.S. solar industry strongly urges that it be raised back to its FY'86 levels of $7.2 million. In 1985, this budget was cut precipitously at the request of OMB because the industry had tax incentves, but by the end of the year, the Congress did not extend these tax incentives and over 100 solar manufacturers and a total of 30,000 people lost their jobs. And as the United States undercuts their own solar heating industry, again our international competitors are increasing their federal support to fill in the void left by the United States.

The solar buildings budget is excrutiatingly small and focusses on two discreet areas. First, the aperature & building surface materials and system research line items maintain U.S. prominence in the passive solar technology. This technology which incorporates building design and materials for low cost ways to produce and save energy has become a new high technology area. The Swedish government and industry have become world leaders in this technology which will become a prime export commodity for them. The U.S. program will maintain the U.S. lead in this prime area of opportunity by developing a federal/industry/ university partnership in several research areas. Second, the chillers, thin film, and evacuated tube line-items are the culmination of bringing advanced technologies research out of theory to a testing and evaluation stage. Indeed, it is these new kinds of technologies that may allow the U.S. to hold a lead in the active solar energy field.

While the solar buildings budget gets severely lopped off every year, U.S. building energy usage is still high, and our international competitors are building their technological competence in order to more effectively compete against us by using the research that was originally funded by the American taxpayer.

SOLAR THERMAL POWER: The technology which focuses sunlight to create high temperatues for industrial process heat or steam for electricity has reached the marketplace. Over 100 megawatts of generation are currently in California with more than twice that amount expected to be "on line" over the next two years. In FY'87 the US-DOE R&D program in this area received $22.9 million and for FY'88, the U.S. solar industry is recommending $28.6 million. The solar thermal power industry is at a crucial stage of transfering research from the laboratory stage into the marketplace, evaluating the technology, and recommending further research.

The potentials of this technology has been overlooked and underestimated by energy policymakers. Solar concentrators have been one of the most efficient technologies for electrical generation and industrial process heat. The micro-utility applications will make this technology more appealing throughout the world. The United States holds a technological lead though the Soviet Union and others are gaining. The greatest cost reduction appear to be the development of lower cost concentrators using stretch membranes, lenses, and other materials.

Thus the collection technology line-item is critical to finish this positive research towards lower cost collectors. The systems technology research line-item is also essential if the U.S. is to effectively integrate this new technology into the conventional utility network. The U.S. has made a substantial investment in this technology and the U.S. industry, in consultation with the U.S. Department of Energy and university community, has developed a five year plan. This five year plan is significantly higher than current appropriations levels and should be adopted as the basis for the American effort to develop this technology.

OVERVIEW OF THE US SOLAR INDUSTRY

By any means, the U.S. solar energy industry is small particularly compared to the conventional energy industries. In 1986 sales for photovoltaics is believed to reach $350 million with over half being exports. In 1986 sales of solar thermal power equipment surpassed $100 million with most of the technology being installed in large utility projects in California. Sales in 1987 are expected to rise significantly. In 1986 sales for solar space & water heating equipment fell dramatically from $900 million in 1985 to $325 million.

In the photovoltaics industry, two industry giants are no longer manufacturing. Solavolt, a joint venture of Motorola and Shell, have closed down their operations, while Mobil Solar Corporation has announced its intention to continue research but not marketing. While manufacturers are thinning, PV packaging and marketing companies are increasing--selling everything from solar-powered street lights to remote, turn-key electric generators.

In the solar heating & cooling industry only twenty major manufacturers exist from over one hundred in 1985. Sales are beginning to rise mostly in the solar hot water heating retrofit and new housing markets. Attempts in federal procurement and exports in 1987 should expand sales slightly. As the solar equipment comes down in cost and the distributor markets are rebuilt, the U.S. solar industry should get back on its feet in 1988.

In the solar thermal power industry, the utility market remains the greatest opporunity. Major projects will be consummated throughout the United States. As long as the U.S. R&D commitment is maintained, this industry should expand most rapidly in domestic applications with more companies involved in all aspects of manuafcturing, sales and installations.

CONCLUSION

To summarize basic industry recommendations, funding levels ought to be stablilized through two year funding cycles with the following appropriations levels for FY'88:

International	$1.5 m
Photovoltaics	$43.1 m
PV-USA	7.5 m
Solar Buildings	$7.2 m
Solar Thermal Power	$28.6 m

In addition, the premier federal solar research laboratory, the Solar Energy Research Institute (SERI), must receive its own line-item (beyond capital equipment). This approach will insure stable funding for SERI as well as provide effective oversight for both Congress and the industry as to how much support from each line-item program actually goes to SERI. SERI must be strengthened and maintained as the central focal point of federal laboratory activities in solar energy.

Finally, the U.S. Congress must establish an national energy policy that focusses on the development of domestic resources in an environmentally sound way. Such a policy must clearly promote those technologies the U.S. has developed through years of government research and support. Solar thermal and electric technologies must be an important part of such a policy. If the United States fails to retain its research programs, the U.S. will be overtaken in these technologies and ultimately lose the multi-billion dollar markets of the 1990's. The choice is clear--to remain competitive the United States must look towards the future, and the U.S. solar energy industry urges the U.S. Congress to do so.

LETTER FROM DAVID H. WOODBURY, M.D., PRESIDENT, AMERICAN COLLEGE OF NUCLEAR PHYSICIANS

March 30, 1987

The Honorable J. Bennett Johnston
Chairman
Subcommittee on Energy and Water Development
Senate Committee on Appropriations
SD - 142 Dirksen Senate Office Bldg.
Washington, DC 20510

Dear Mr. Chairman:

The Society of Nuclear Medicine and the American College of Nuclear Physicians are disappointed that other commitments necessitated the cancelling of the April 2 hearing on DOE appropriations for FY 1988. Our witness was looking forward to highlighting the accomplishments and future needs of the Department of Energy's Nuclear Medicine Applications program.

As requested, we are submitting our formal statement for the record (enclosed). After much consultation with leading investigators across the nation who conduct Nuclear Medicine research with DOE funds, the Society and College have determined that a substantial infusion of funds is needed in the DOE Nuclear Medicine research program to reverse its flat or declining funding trend over the past 10 years (after inflation). We therefore respectfully recommend a 10 percent increase for DOE Nuclear Medicine research in FY 1988, and a doubling of this program's budget over the next five years.

Our statement describes some of the extraordinary research currently underway in this field, and points out the enormous return on investment that we have witnessed from past DOE research support. Breakthroughs from this support have led to significant improvements in the diagnosis and treatment of cancer, heart disease, stroke, Alzheimer's disease, and numerous other diseases and disorders that afflict millions of Americans. The time has come, however, where this momentum cannot be sustained without increased support to fund promising research projects, renovate aging facilities, refine instrumentation, and to attract bright, young investigators into this field.

Mr. Chairman, the Society and College sincerely hope that you and your Subcommittee will favorably consider our recommendation and provide the DOE Nuclear Medicine research program with the increased funding it desperately needs. We would be pleased to meet with you and your staff to discuss our recommendation, as well as the exciting Nuclear Medicine research we see on the horizon.

We very much appreciate the opportunity to present our views to the Subcommittee.

Sincerely,

Howard J Dworkin

Howard J. Dworkin, M.D.
President
Society of Nuclear Medicine

DH Woodbury

David H. Woodbury, M.D.
President
American College of
Nuclear Physicians

STATEMENT OF THE SOCIETY OF NUCLEAR MEDICINE AND AMERICAN COLLEGE OF NUCLEAR PHYSICIANS

Mr. Chairman and Members of the Subcommittee, the Society of Nuclear Medicine (Society) and the American College of Nuclear Physicians (College) are pleased to offer the following statement regarding the Department of Energy's FY 1988 budget for the Nuclear Medicine Applications Program. The Society is a scientific organization of over 10,000 members including physicians, scientists, physicists, chemists, molecular biologists, radiopharmacists, technologists and other professionals engaged in the medical uses of radioactive materials. The College is a professional organization representing more than 1,200 physicians and scientists actively engaged in the practice of Nuclear Medicine.

The Administration's FY 1988 budget proposal seeks $22,890,000 for the DOE Nuclear Medicine Applications program, roughly a 3 percent increase. We do not believe this funding level is sufficient, given that over the past decade, and particularly during the last six years, the DOE Nuclear Medicine research budget has been flat or declining, after adjusting for inflation. **The Society and College fully support this program and recommend a funding level of $24,332,000 for FY 1988 (an increase of 10 percent), and a doubling of the DOE's Nuclear Medicine research budget over the next five years.**

We do not make this recommendation lightly or without regard for the budgetary problems facing this country. On the contrary, we see federal funds allocated to research and development as an investment in the future. We believe that it is our duty to point out the numerous accomplishments of Nuclear Medicine research, and to show you where additional funds are sorely needed.

It is widely accepted that virtually all of the advances in the technology, procedures and applications of Nuclear Medicine today are direct results of research supported in whole or in part by the DOE. The return on investment from this research funding has been extraordinary, but we would caution that basic research is not amenable to budget cutbacks or insufficient growth; research that is not conducted today due to insufficient funds constitutes lost opportunity, and cannot easily be "made up" down the road. We therefore urge you to provide the necessary steady infusion of funds needed in the DOE's Nuclear Medicine budget to allow the progress and momentum of discovery in this field to continue. Because research does not advance according to accounting ledgers, it must be constantly nurtured by taking on the brightest young scientists, providing state-of-the-art facilities and equipment, and supplying the necessary funding to make it all work.

WHAT IS NUCLEAR MEDICINE?

Nuclear Medicine is a highly-sophisticated field in which safe amounts of radioactive materials are used to provide vital information necessary for the diagnosis and treatment of disease. Nuclear Medicine procedures offer a non-invasive alternative for monitoring body functions and body chemistry, diagnosing and isolating the cause of diseases, and identifying anatomic and physiologic abnormalities in ways that were never before possible.

Generally, Nuclear Medicine procedures are of two types: the imaging study, in which measurements are made of radioactive tracers as they pass through the body; and diagnostic *in vitro* examinations, in which no radioactive materials are administered to the patient, but rather a sample of some body fluid (usually blood) is reacted with a radioactive reagent in a test tube. These procedures are safe and painless for the patient, reduce total health care expenses and hospitalization time by streamlining and improving the diagnostic process, and often provide more useful information about a patient's problems than that available from other diagnostic procedures that are more costly, such as cardiac catheterization.

ACCOMPLISHMENTS AND FUTURE DIRECTIONS IN DOE-SUPPORTED NUCLEAR MEDICINE RESEARCH

The following are a few examples of the recent advances in Nuclear Medicine that have come about through DOE-supported research, and that demonstrate the importance of a continuing high level of research funding:

(A) CARDIAC NUCLEAR IMAGING

One of the most dramatic examples of the rapid transfer of basic research developments to the clinical setting is the non-invasive study of the human heart. Sixty million people suffer from cardiovascular disease, and 700,000 people die each year from heart attacks. In almost 300,000 people, their first symptom of heart disease is sudden death. Hence, early accurate detection and diagnosis of coronary heart disease becomes even more important.

Nuclear diagnostic techniques developed and applied over the last 6 years are significantly less risky and less expensive in identifying individuals at risk than other diagnostic methods such as coronary arteriography and more accurate than electrocardiographic stress testing. Most notably, Positron Emission Tomography (PET), which has been developed in large part from DOE research support, is the only non-invasive method of measuring the metabolic activity of the heart. PET has proven to be the most definitive test for differentiating between reversible myocardial ischemia (treatable) and infarction (dead tissue), and offers new insights into the selection and evaluation of therapeutic interventions ranging from drugs to angioplasty to bypass surgery. PET also provides improved sensitivity and specificity for the detection of mild, developing coronary artery disease in asymptomatic individuals (so-called "silent heart disease").

Another technique, using the radioisotope Thallium-201 in conjunction with Single-Photon Emission Computed Tomography (SPECT), allows physicians to monitor blood flow in the myocardium, and therefore to evaluate the successful clearing of blood vessels following balloon angioplasty. The cost-effectiveness of such a technique cannot be understated. For example, a $500 Thallium-201 heart imaging study which is judged to be normal essentially can exclude the presence of significant coronary artery disease, thus eliminating the need for cardiac catheterization costing $4,000. This same test performed after a heart attack, or prior to surgery for those with blocked leg arteries, can identify the individual who is at high risk for subsequent cardiac complications. DOE-sponsored research has aided in the development of new Technetium-99m labeled cardiac imaging agents which promise to be superior to Thallium-201.

(B) CANCER

It has been estimated that 855,000 Americans will be diagnosed each year as having some form of cancer. Even more disturbing is the fact that 1 of 3 babies born in 1986 will develop cancer in its lifetime. Nuclear Medicine technology and procedures developed through DOE-supported research allow not only the early detection and diagnosis of tumors but also a determination of the degree and nature of the malignancy. A new breakthrough was reported this year from one of DOE's national laboratories involving the new tracer putrescine and PET which not only allows an early distinction between normal and malignant cells, but is also able to detect small hypermetabolic tumors and reveal their degree of malignancy. Other DOE-supported research has resulted in the development of Flourine-18 and Iodine-123 labeled estrogen receptor-binding radiopharmaceuticals useful in the early non-invasive detection and diagnosis of breast cancers and metastases. These techniques may also determine the efficacy of various types of anti-estrogen therapy without surgical intervention.

Nuclear Medicine procedures are also heavily used in the treatment and monitoring of therapy for cancer patients. PET scans which provide a complete profile of a tumor's glucose and oxygen metabolic rates as well as blood flow in and around the tumor, assist the physician in determining the most appropriate therapy for different categories of tumors. PET scans also provide a unique means of detecting recurrent or disseminated malignancies.

Despite this progress, however, present technology cannot pinpoint very small cancerous growths and determine their nature. Additional research is needed to develop more specific radiopharmaceuticals, and to explore sophisticated immunologic and biochemical methodology. DOE is supporting work aimed not only at brain and breast tumors but also at prostate and pancreatic tumors.

DOE-supported research in the area of radiolabeled monoclonal antibodies represents another challenging, yet promising avenue for the diagnosis and treatment of cancer. The powerful ability of radiolabeled antibodies to highlight not only the organ but minute sections of diseased tissue of the otherwise healthy organ, allows practitioners to obtain more precise information on the exact location and extent of disease that cannot be seen with other diagnostic methods. The use of radiolabeled antibodies is not without problems, however, and more research is needed to improve efficacy and to diminish toxicity for cancer patients.

(C) BRAIN

A significant research contribution of the DOE-sponsored research is the investigation of the chemistry and metabolic patterns of the brain and central nervous system. PET is the first imaging technique that illustrates the ongoing metabolic activity in various regions of the brain in living, awake human beings. Recent PET studies have revealed the functional development of the brain from infancy to early adulthood, providing promise for the future understanding of childhood learning disorders and retardation. Today, children are being cured of intractable epilepsy because of the specific diagnostic information that can only be provided by PET.

PET is also providing new insights into the study of dementias, stroke, epilepsy, and neuropsychiatric disorders. With its advanced specificity, PET improves the physician's ability to differentiate in his diagnosis between Alzheimer's, multiple infarct dementia, Huntington's, and Parkinson's, to separate these diseases from the normal aging process, and to remove confounding issues of therapies applied to patients that are heterogenous mixtures of different diseases. Additionally, scientists using SPECT can detect not only abnormal blood flow patterns in the brains of Alzheimer's patients with severe dementia, but can now detect this debilitating disease in its earlier mild and moderate stages. This exciting breakthrough provides great hope for the eventual treatment and prevention of Alzheimer's, which afflicts over 2 million elderly Americans at an annual cost to the taxpayer of $25 billion.

A problem ready-made for PET studies is stroke, because this technique permits the non-invasive measurement of cerebral blood flow and oxygen metabolism. This information can lead to an objective, quantitative assessment of a stroke victim's response to therapy. DOE-sponsored investigators are also using PET scans to interpret the biomedical characteristics of the brain that are related to schizophrenia, and how the brain is affected by changing doses of antipsychotic drugs, which may lead to more accurate methods for determining the correct doses for schizophrenic patients. Finally, PET scans are being used to study epilepsy and manic-depression, as well as various receptor systems such as dopamine and morphine receptors which are involved in a variety of mental disorders.

PET is also being used to investigate illegal behavior-modifying drugs such as cocaine to determine the basis of addiction as well as how the drug alters, reversibly and irreversibly, the chemical processes of the brain (and heart). Experts have estimated that today's cocaine traffic in America is from $50-100 billion per year, with its impact on society taking a much greater toll.

DOE is supporting work to carry out investigations similar to those currently underway with PET using the less expensive technique SPECT. DOE's national laboratories currently provide the purest form of the tracer Iodine-123 which is necessary in synthesizing compounds to study strokes.

(D) PEDIATRIC NUCLEAR MEDICINE

Further examples of the improvement in health care emanating from research and development in Nuclear Medicine techniques are in the area of pediatric medicine. A Nuclear Medicine bone scan is the most effective technique for the early differentiation between bone infection and soft-tissue infection, disorders that are clinically similar, but markedly different in treatment and outcome. A Nuclear Medicine liver excretion study is the only method short of exploratory surgery to differentiate blocked bile ducts from liver inflammation in jaundiced newborn infants, who tolerate surgery very poorly.

Short-lived isotopes available only from DOE facilities permit repeated determination of cardiac function with exercise or administration of drugs, which is particularly important in pediatrics because children change for better or worse much faster than adults, making speed in diagnosis critical. Isotopes with short half-lives also deliver much lower radiation doses to patients. Despite these advances, however, there is a significant need for further research and development to identify new products that will aid in the diagnosis and treatment of numerous childhood diseases and disorders, including new radiopharmaceuticals for childhood cancers such as neuroblastoma, short-lived radiopharmaceuticals for cardiac disorders, and specific perfusion or blood flow radiopharmaceuticals for central nervous system disorders.

(E) AIDS

It has been shown in recent studies that nuclear scans can play a major role in the diagnosis and treatment of AIDS patients by detecting opportunistic infections associated with the disease. Recent research reveals that Gallium-67 scans can detect pneumocystis carinni pneumonia (PCP) that conventional x-rays may not detect, and other scans can be used to determine how well a patient is responding to therapy. PET studies are now being performed in AIDS patients to provide new knowledge and understanding of which chemical systems of the body are selectively attacked by the AIDS virus. Since this rapidly spreading fatal virus has already infected 1 to 1.5 million Americans, and 25-50% of these victims are expected to develop AIDS or AIDS-related conditions within five to ten years, further research in this area is vital.

INSTRUMENTATION AND FACILITIES NEEDS

Progress in Nuclear Medicine research and the eventual application of research results in the clinical setting is heavily dependent on the refinement of existing instrumentation, the development of new technology, and the renovation and construction of state-of-the-art facilities. With all of its promise for improving the diagnosis and treatment of disease, PET technology requires further refinements in its ability to resolve small structures more discretely. Moreover, because PET studies require on-site cyclotrons, additional research and development is needed to design more compact, convenient, and less complex models so that more patients can benefit from this exciting technology. In the meantime, DOE research funds could be wisely spent in exploring the potential of SPECT, which could be readily available in most Nuclear Medicine departments, and in designing and developing new radiopharmaceuticals for use in clinical Nuclear Medicine.

The Society and College would also like to point out that the Nuclear Medicine programs in Europe, and particularly Japan, are on the upswing with large amounts of technology advances. Japan, which has the highest percentage of GNP devoted to its civilian R&D program, has made a national commitment to PET (by presidential mandate) and is currently funding six large companies and 12 universities and institutes, with remarkable results. We are concerned that Nuclear Medicine research facilities in the United States, along with other research facilities in general, are not being maintained due to insufficient funding. Aging laboratories and equipment must be rebuilt; the U.S. is already beginning to fall behind in this R&D capability. The more imminent danger is that the best and brightest investigators will begin to desert DOE laboratories and Nuclear Medicine, and it will become difficult to recruit young scientists and physicians into the field. This declining trend must be reversed, and a new sense of commitment restored.

CONCLUSION

Nuclear Medicine research supported by the DOE has been at the forefront of exciting and important medical discoveries, yet it is poorly funded both in relation to past and projected future yields, and to other federally-supported basic research programs. The Reagan Administration's FY 88 budget request proposes an average 12% increase in R&D funding across all federal agencies engaged in R&D activities; Nuclear Medicine research funding, however, would only rise by a scant 3 percent. Moreover, a recent Louis Harris poll taken during 1983 revealed that an overwhelming majority of Americans believe that "government funds for basic research should be increased by a sizable amounts -- even in this era of tight federal budgets and soaring deficits."

The Society and College firmly believe that in order to reverse the flat funding trend in the DOE's Nuclear Medicine research program over the past 10 years, a substantial and steady infusion of funds is needed. Our recommendations for a 10% increase for this program in FY 1988 and for a doubling of its budget over the next five years would serve as a first step in meeting this challenge. Such an increase may seem lofty in this era of budgetary constraint, but it is our sincere assessment of what is needed not only to maintain but to bolster a program that has made substantial contributions toward improving the health of the American public as well as holding down rising medical costs. We hope that this committee will continue its past support for research and development, but will go one step further and provide the increased funding necessary to allow scientists to take advantage of the new research opportunities on the horizon.

The College and Society want to assure the Committee that the Nuclear Medicine community will continue to work closely with the Department of Energy in the development of its research programs. Judgments on the areas of research most likely to lead to clinical applications five years out are difficult. We stand ready to help this Committee and the Department of Energy to identify important new directions in diagnostic imaging and therapy. The exchange of views and knowledge between DOE officials and the medical community helps to assure that the greatest possible benefit is derived from the funds committed.

STATEMENT OF THE IEEE ENERGY COMMITTEE

My name is Mr. Charles N. Claar and I thank you for the opportunity to appear before you today on behalf of the Energy Committee of the Institute of Electrical and Electronics Engineers (IEEE). The IEEE is the world's largest technical professional society with over 282,000 members worldwide, more than 228,000 of whom live and work in the United States.

The IEEE has an official Institute Position Paper on "The Role of Electricity in the U.S. Economy" which has emphasized the fundamental importance of energy availability to the welfare and economic health of society. Our position recommends an increased role for electricity in the nation's energy economy and calls for increased support of research and development programs to improve electric power systems' efficiency and reliability, as well as to provide advanced energy conversion technologies.

The IEEE has consistently supported the Electric Energy Systems (EES) and the Energy Storage Program (STOR) in testimony before Congressional Committees having budget oversight responsibilities. We strongly support the DOE's emphasis in this year's budget and we support the continuation of these programs; however, we are disappointed in the continuing reductions in research funding. A long-term commitment to research in EES and STOR, both complex and critical areas, is essential. Government and industry agree that research continuity is important but maintaining such continuity is becoming increasingly difficult, when budget levels change by factors of 50% from year to year.

Research does not have immediate paybacks. Technological advancements require hard, patient and deliberate efforts for extended periods of time. Further, to advance technology in this complex world requires a significant and continuing investment in human and capital resources. Research should not be subject to peaks and valleys in funding levels, because the quality of that research will suffer. Because electric utilities revere the importance of safety and reliability in electricity supply, new technologies must show great promise in order to be developed and accepted by the utility industry. Sharing the risk on these projects as government and industry must, is a particularly difficult problem when budgets undergo dramatically annual changes.

We have reviewed the current program plan and are concerned that requested of funding levels will severely curtail important research efforts. The reduction in funding from 27.9 million to 14.0 million will not only have an adverse impact on research but program administration, continuity and coordination.

The EES and STOR research programs are designed with a knowledge of the energy requirements of the United States and the mandated rules of funding research given by the Department of Energy. The guidelines for what is appropriate for active government support are well articulated. The government involvement is principally focused on areas that are crucial to the economic well-being and security of the nation and are high-risk and long-term programs. These programs cannot or will not be attempted by non-government entities. Industry, principally through the Electric Power Research Institute (EPRI), places emphasis on the solution of near-term problems. Manufacturers generally have not supported long-range, high-risk research, because they require a return on their research investments within five years or less. Tax structures, foreign government-supported competition, and the growing cost-price squeeze all tend to limit manufacturer long-term research support. The research that does exist is directed toward improvement of existing lines of equipment in which there is already a heavy investment. Utilities' suport of research is restricted not only by financial conditions which are increasingly severe in some regions of the country, but also by regulatory and rate based pressures.

IEEE is concerned that the current adequacy of energy supplies belies the fact that this is a transient condition and this "glut" of supply could end in the early 1990's. The Energy Committee of IEEE believes this to be so and recent articles in the popular and business press report concurring expert opinion.

Given the funding constraints that are evident in the FY 1988 Federal budget, IEEE urges that the EES and STOR research programs be funded with the following priorities:

- Electric field health effects
- Nuclear electromagnetic pulse (EMP) effects on electric power systems
- Continued development of the sodium/sulfur battery

Studies in D.C. electric field effects are facing reductions in FY 88. This is most unfortunate because public concern is continuing to grow over the health-related effects of electric fields. A reduction in funding will certainly not permit any new research and it will result in an undesirable slowing down of current activitiy. This is especially troublesome when utilities are considering expansion of D.C. transmission facilities. We are gratified to see a small increase in funding for A.C. field effects since there is a possibility that some states may institute field effect standards without the benefit of adequate research. It is the responsibility of the federal government, because of its acknowledged credibility in this area, to provide unbiased information on the biological effects of electric fields.

Similarly, the proposed FY 88 budget would reduce the investigation into the performance of power systems and equipment under the effect of electromagnetic pulses. These pulses could be generated by nuclear blasts at high altitudes in which no physical ground damage may be visible. However, they may produce not only a wide disruption of electric system continuity with resultant economic and public chaos, but also a serious threat to national security. There is insufficient knowledge of these wave forms and their behavior on systems and equipment. Insufficient funding is provided to carry on any new effort and precludes serious and extended testing of equipment under these very adverse transient conditions. Because EMP effects are very foreign to the normal operation of a power system, electric utilities will not do this kind of research. It is important for DOE to continue and expand this research so that information derived from it can be used by the electric power industry where applicable.

In FY 88 sodium/sulfur battery research is reduced 61%. This at a time when the Electric Power Research Institute (EPRI) has reduced its sodium/sulfur battery research by 79% and both Ford and General Electric have ceased such research. IEEE is pleased to see funding of this research but we are discouraged by the funding reduction. Sodium/sulfur battery research has been characterized by steady progress, and significant accomplishments are only 2 or 3 years away, provided adequate funds can be made available. The bulk of the continuing research must focus on the two largest remaining obstacles extending life and reducing first cost. World-wide research on the sodium/sulfur battery is funded at the $30 million level, with U.S. research 5% of the total. Japan, Great Britian, France, West Germany and China are the prime

foreign researchers in this area concerned as we are with load leveling and land transportation. The potential market for such equipment could easily default to foreign competition if we do not vigorously pursue sodium/sulfur battery research, which IEEE strongly supports. Finally, DOD is funding space qualified sodium/sulfur battery research at a $2 million per year level, arousing other conerns which we will address shortly.

There are three additional issues which we believe impact the value of the research being conducted by the EES and STOR programs, which we feel warrant the attention of the Committee. These are:

- Technical leadership and expertise
- Technology transfer of research
- Need for DOE to leverage their research efforts with programs funded by other government agencies (DOD, NASA) and with those carried on in other countries.

Over the past few years there has been a significant attrition in both government and private industry technical leadership in the EES and STOR programs due to the severe reductions in research funding. Meaningful and successful research will only result when there is a continuum of experienced technical expertise available to do the research and educate and train new manpower. As research dollars dwindle the research personnel will seek other career opportunities if continuity of funding is unreliable. This is a serious implication of declining research monies.

As previously mentioned DOD is researching space based sodium/sulfur batteries as well as EMP. We know such research is important to their mission and we support their efforts. In both cases DOD researchers are certain to have experiences and findings that would be essential and helpful to similar civilian researchers in their respective fields. Our concern is that important research findings in EMP and STOR by DOD would be classified and thus unavailable to the civilian sector. We urge the Committee to study this issue and initiate steps to see that research valuable to the reliability of the nation's power supply and the development of a sodium/sulfur battery is available for the use of the civilian sector of the United States.

In summary, one must not lose sight of the hard facts of research. From the inception of the research program to commercial viability, a project may take 10-15 years to complete. We must be working today for systems to be available for commercial use in the 21st century. The Electric Energy Systems and the Energy Storage Programs are both dedicated to important and critical research. It will require long lead times and continuity of funding through the whole R&D cycle to achieve success. Research activities that can provide benefits to public health, national security, and the economic viability of our electricity production and electric utility manufacturing industry are deserving of serious consideration for government funding in FY 88.

Thank you.

STATEMENT OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

I am Charles W. Bushnell, an engineer at Princeton University's Plasma Physics Laboratory. I am presenting testimony on behalf of the Energy Committee of the Institute of Electrical and Electronics Engineers (IEEE). The IEEE is the world's largest engineering society, with nearly 260,000 members worldwide, 215,000 of whom live and work in the United States. Approximately 82% of our membership is employed in industry, 8% in academic institutions, and 10% in the various government laboratories and agencies. The Energy Committee itself has representatives from 32 different technical societies (within the Institute) and 6 different geographical regions. The Committee is vested with the authority to develop the Institute's energy policy and, once that policy is adopted by the Institute, we are one of the major mechanisms by which the policy is voiced in public.

Introduction

We are pleased to have been given the opportunity to address the very important area of fusion energy development. We continue to believe that fusion possesses the highest potential of any currently known energy sources for producing base station power. As we do each year we again wish to commend this Subcommittee for its strong support of the fusion effort over the years. Indeed we are heartened by the government's attention to several of the issues we raised last year before your Committee:

1. The immediate need for a burning core experiment
2. The declining fusion budget
3. The role of international cooperation

We are happy to note that a burning core experiment has now become part of the Department of Energy's FY-88 budget. It will now be necessary for the Congress to scrutinize the pace of this project and balance it against other budgeting priorities. There will be more to say on this later in my testimony.

We are also happy to see an apparent halt in the declining funding of fusion, albeit still a decline in "real" dollars. Table 1 details the fusion budget over the past several years.

TABLE 1

Budget History of Fusion*

Fiscal Year	Budget - $M	%Change from Prior FY
FY'82	451.2	---
FY'83	461.3	+ 2.2
FY'84	468.0	+ 1.4
FY'85	437.0	- 6.6
FY'86	365.4	-16.4
FY'87	345.3	- 5.5
FY'88 (Proposed)	345.6	0

*all dollar values are in "as year" dollars

We hope the severe cuts, seen in past years are behind us.

While we are pleased to sense a welcome change in the governmental actions noted above, we feel that it is now time for Congress to properly address the following:

1. Is the present DOE funding strategy making best use of the capital investment already made by the American people and the planned future outlays?
2. Are we preparing both the scientific and industrial communities to move forward with the results that will come forth from these planned experiments?

In some ways, all of the above issues are alike in that they rely on appropriate funding; however, let us now examine them to see the unique requirements of each one.

In these times of severe budget crises, when a number of expensive major programs are being requested (e.g. SSC, Space Station), it appears futile, if not completely naive, to ask for more rapidly paved funding for the fusion program. However, given that one no doubt has a zero-sum game, we would note to Congress the consequences of a go-slow budget. In figure #1 we show but one example, of a "required" funding profile to construct (and perform auxillary R & D) the Compart Ingnition Experiment (i.e. the name of the burning core experiment). As you can see, there are sizeable differences. The consequences of maintaining these drastically lower annual spending levels will inevitably be increased construction cost and longer time delays.

As this subcommittee, no doubt, remembers the Fast Flux Test Facility at Hanford Engineering Laboratory in Richland, Washington cost 200% to 300% more than initially planned and took nearly 3 times as long to build due to low profile funding. While we in IEEE can sympathize with the need to "get the camel's nose under the tent", we would ask the Subcommittee to view the magnetic fusion program and the results it promises to bring with other national research efforts and the results they promise to bring, and then decide which "promises" you wish to have first!!

While we, in fusion science and engineering, cannot predict the actual future energy needs, non environmental priorities, that this nation will have in the 21st century it is certainly important to have a number of technologies ready to be commercialized so the country will have a choice. The need for having choices in the next century should be the long term driving force towards developing fusion at an appropriate pace.

The time span to design, construct and operate to a level of reasonable physics output a major device is about 6 to 8 years (it has proven to be 10-12 years for devices such as TFTR and JET). Results in '95 and '96 are critical to providing timely input to the design of an Engineering Test Reactor (ETR). This would be the "last" solely government funded fusion machine.

In addition to construction cost problems, the R&D effort is shown to be equally hampered by funding. This program, prototypical in nature, is designed to assure the manufacture and assembly phases will proceed along a timely schedule. At the 50% level of funding presently envisioned by DOE the design schedule is severely affected and reasonable manufacturing schedules will slip.

Historical Reminder and Recent Progress

The fusion program has the well-recognized long-term goal of providing the world with essentially limitless energy from sources (deuterium extracted from water) which enjoy no geographic or political boundaries. Over the past three decades the American people have supported this goal with funding totaling $4.5B. Now, just when physics' strides toward the goal are significant and the prospects of expanded industrial opportunity are in view there seems little financial incentive to capitalize upon our investment.

Consider a few physics results of just this past year:

1. A key measure of progress in fusion science is the product of the plasma density times its energy confinement time. The world record, held by TFTR has now risen to $1.5 \times 10^{14}\ \mathrm{cm}^{-3}$ seconds - about a factor of only 2 from CIT requirements and an improvement of nearly a factor two from levels of one year ago.

2. The knowledge of plasma profiling and heating has greatly increased with the resultant effect of more easily heated plasma cores - this includes demonstrated radio frequency current drive techniques that have increased by factors of over the results available just a year ago.

Physics' understanding has improved tremendously in just 12 months but flat budgets are impeding breakeven (Q=1) and beyond.

As pointed out earlier reduced funding priorities bring on delays and large program and project cost increases. Not only is the procurement of new hardware reduced, and existing schedules extended but the lack of program virility will cause a diminishing of talent - and the best leave first! (Indeed we are seeing signs of that effect.) We must have a strong scientific community if we are to lead international cooperation.

Again, in this international arena, the IEEE in its own position paper states "the IEEE urges the continuance of broad areas of international cooperation in promoting fusion power research." Thus, we endorse open international scientific collaboration. The U. S. has already had very profitable scientific exchanges and should continue to do so. However, within the United States, and indeed within the IEEE as well, debate continues as to where the line should be drawn between healthy scientific exchange and the dissemination of that technology that is essential for our industrial competitiveness. It is the exchange of this industrial technology that should be of concern. Other countries that subsidize their industry to penetrate U. S. markets make the best of this situation by using our technology developments as a blueprint for implementation and then beat us by manufacturing products at lower costs.

How can we have our industrial community ready to participate (its share, estimated at $1B) in an international ETR effort (in the mid 1990's) and to capitalize on reactor production efforts? They must be strong and ready to surpass their world peers. You can't give away technology you don't have. We further run the risk of not even being included in the effort. This strength and the industrial community's support will come when a focused, evenly financed program exists that leads toward a goal of industrial production of power reactors. This Subcommittee has always been at the forefront as bringing DOE's attention back onto a focused and reasonable funding profile. This is not only required for CIT but it will need to be followed by proper funding for ETR design and R&D activities. With this consistent pattern we will develop and insure industrial ability that will allow strong industrial participation in the world marketplace.

We know that this subcommittee shares these goals and IEEE can only hope there is some reasonable way to insure these goals are carried out.

In closing, the Institute requests would like to suggest two measures:

1. Examine and readjust if possible the funding profile for the CIT program so that it may assume its rightful role as the foundation of a timely effort toward the goal this Subcommittee, and we believe the American people, have supported.

2. Maintain vigilence in making sure that DOE not only carries out its goals expeditiously, but insures that U. S. industry as well as the fusion science community is prepared to take a leading role in fusion power development in the future.

The program stands upon the threshold of delivery. The American people, patient and generous in their support, deserve the results. American industry deserves the opportunity to participate in the 21st century. We must either move forward or fall hopelessly behind.

ADDITIONAL STATEMENTS RECEIVED

Senator COCHRAN. Finally, at the direction of the subcommittee chairman, the hearing record will remain open for 2 weeks to receive statements on various projects. Any statements received after this hearing will be made part of the record at this point.

[The statements follow:]

STATEMENT OF THE AMERICAN FORESTRY ASSOCIATION

The American Forestry Association, the national citizen's organization for trees, forests and forestry, is distressed by the proposed near elimination of the natural resource programs of the Tennessee Valley Authority. We thank you for the opportunity to submit a statement in support of the innovative and cooperative research, management, and educational efforts of the TVA.

The TVA has a distinguished history of service to the people and the resources of the Valley, much of which has been due to the effective natural resource, economic and agricultural development programs of the agency. These programs often lead to the development of technologies, natural resource management techniques, and recreational and educational opportunities which benefit the entire country. To suggest — as the President's Budget Proposals do — that such programs are beyond their usefulness, or that there is no longer any need for them in the Valley, is shortsighted. Many of the resource and economic challenges with which the TVA has wrestled are now facing other regions of the country; TVA's cooperative, yet non-duplicative, interactive relationship with other federal and state agencies continues to be a useful model for the nation.

The TVA Act gave the agency broad responsibilities and fostered an integrated approach to resource management. We would like to highlight examples of TVA's contributions to the environment and natural resources of the region, and the nation as well. For convenience, we will group these efforts and accomplishments into the following general resource categories: forestry and agriculture; water; wildlife; air quality research; and environmental education, although specific programs obviously benefit many if not all of these broad areas.

In addition, we would like to address the importance of Land Between the Lakes, the national recreation and environmental education center which benefits over two million visitors annually, and which in many ways exemplifies the broad accomplishments of the agency.

Forestry and Agriculture. The science and practice of forestry has benefitted greatly, as has the region's economy, from TVA's reforestation and forest management research and leadership. More than 75% of the region's forestland is in relatively small private holdings. Because these land owners typically lack the information needed to fully manage their woodlands for timber, wildlife and other forest resources, TVA's educational efforts have encouraged these small forestland owners to adopt improved management practices. Millions of trees were planted because of TVA education and outreach to these private landowners. Those trees are now a major factor in the economy of the Valley.

As an example, we highlight the effects of enacting the President's budget recommendations on TVA forestry efforts in Mississippi and Georgia.

Mississippi: The elimination of technical assistance for the forest land aggregation project to improve forest/wildlife productivity and marketing capability. Computerized technical support to the Mississippi Forestry Commission for forest management planning, including microcomputer software being developed for private landowners, would likewise be unavailable. Also foregone would be cooperative forest industry expansion efforts which would have added about 50 jobs in the state.

Georgia: TVA maintains current forest resource information on almost 4 million acres of forestland in the state. Dissemination of this information would cease under the President's budget. Assistance to forest products firms that request technical and wood resource information would also be terminated.

A recent Forest Service report, "The South's Fourth Forest: Alternatives for the Future," indicates that net annual growth of southern softwood and hardwood timber has leveled-off or started to decline, and suggests that the major opportunity to increase timber supplies lies with nonindustrial private forestland owners. Effectively reaching out to these landowners will require the continued partnership of TVA and other federal and state forestry agencies.

In addition, the country continues to face the challenge of too many acres of marginal acres in crops; a national problem of such scope that the conservation provisions of the 1985 Farm Bill alone will not be able to completely manage it. Currently, TVA, USDA, State, universities, and other organizations conduct cooperative soil and water conservation programs in the region. TVA's continued leadership, outreach and program support in conservation is needed in the coming years to help address this crucial resource problem.

Water. TVA's effort to provide a surface water quality monitoring and trends assessment — to help TVA manage its reservoirs — provides information for State discharge permits, and acts as an early warning system for emerging water quality problems. TVA cooperates with States, and federal agencies such as the the Soil Conservation Service, and the Environmental Protection Agency to address non-point source pollution and toxic water contamination from surface mining, agriculture, livestock operations and other sources. In the Land and Water 201 program, TVA, USDA, EPA, and the Valley States are working together to reduce soil erosion, increase farm income, and provide a national demonstration of non-point source identification, inventory, and control in the 201 counties of the Tennessee Valley region.

Air Quality Research. TVA has conducted atmospheric acid deposition monitoring and research in the Valley for 25 years, and is taking significant steps to develop and implement pollution control technologies for its power plants — concepts which are appropriate for other power generators as well. TVA is also conducting important studies on the effects of air quality — specifically acid precipitation — on soils, forests, fisheries, and water quality. In the Southern Blue Ridge Province, for example, TVA is participating in an examination of spruce/fir forests for clues about the extent and severity of productivity declines -- declines which some scientists link to air pollution or "acid rain." If allowed to do so, TVA will no doubt continue to be an important cooperator in the effort to understand both the cause of acid precipitation, and its impacts on forest and aquatic resources.

Environmental Education. In addition to the educational activities that it operates on its own lands, TVA has established a network of 10 functioning cooperative centers at Valley universities that provide teacher training, educational programs, research, and environmental study areas. This model for environmental education is now spreading to universities outside the Valley, and States as far away as North Dakota and Montana have worked to establish similar programs.

The Land Between The Lakes. For the past 25 years, TVA's Land Between The Lakes (LBL) has served as a showcase of multiple resource management based in large part on the results of the agency's extensive experimentation and applied research — a fitting symbol of the multipurpose, imaginative approach which is characteristic of the agency today. LBL provides a national demonstration in integrated natural resource management, providing wildlife, recreation, and education benefits. It receives visits from over two million people a year who come to hunt, fish, camp, observe wildlife, or just to "get away". These visitors leave with a renewed understanding and appreciation of their natural environment. AFA urges you to continue LBL activities at current levels.

The history of TVA is a proud one, and its work and future contributions are far from complete. Per capita income of this region still lags behind the national average, and national investments, in the development and improved utilization of the region's resources, through a proven performer like TVA, are an important key to helping the region close the gap. Furthermore, TVA provides information and models of cooperation which can help combat resource problems at the national level.

We thank you for the opportunity to share these views with you. We hope, as this Committee assists in the development of the 1987 budget, you will continue to take the value of this organization, both to the region and to the Nation, into consideration.

STATEMENT OF THE SIERRA CLUB, NEBRASKA CHAPTER

On behalf of the Nebraska Chapter of Sierra Club, I respectfully submit the following comments regarding the Proposed Prairie Bend project in central Nebraska. This position statement has been written to serve as testimony for the official hearing record for hearings of the House Subcommittee on Energy and Water Development, the Honorable Tom Bevill, Chairman. Positions on Prairie Bend were solicited by our Third District Representative, Mrs. Virginia Smith. I am sending you a copy of our statement at her suggestion (letter enclosed).

For the past three years, representatives of the chapter have participated in the Public Values Group, which was sponsored by the U. S. Bureau of Reclamation and the Central Platte Natural Resources District. This collection of interested citizens and agency representatives had as its mission the task of reaching a consensus about how Prairie Bend could best use some of the remaining flows of the Platte River to augment groundwater supplies which have been substantially depleted by years of irrigation withdrawals.

Regrettably, after three years of discussion and the offer of a considerable measure of compromise, we in the chapter find ourselves compelled to dissent from the proposal recommended by the group. We encourage you not to authorize further funding for the reasons enumerated below:

1. LACK OF A BASIN-WIDE PLAN

We are dismayed, even distraught, that after the effort and co-operation we have extended to the Public Values Group, and after two decades of pleading with various agencies and project proponents, neither Nebraska, nor the Platte River basin states, have addressed the need for a comprehensive and co-ordinated river plan. We view such a plan as imperative. It should, at a minimum, incorporate a thorough description of the river, a listing of existing and possible future uses of the river and its flows, a policy statement about priorities, and a spelling out of regulatory mechanisms for achieving these goals.

Instead of using this approach, Nebraska and the other basin states operate on an antiquated first-come, first-served basis. I. e., "Get it quick before somebody else does." As a result, all of us who recognize the value of the river itself find ourselves defending it over and over against a wearisome parade of entrepreneurial diverters who file an application to divert, describe the river as they have just found it, and make assurances that they will not harm it too much.

Today, seventy percent of the historic flows are now gone down the canals, serving primarily as surface irrigation water, and secondarily as cooling water, recreational lakes, groundwater recharge, domestic and industrial supply, and lost through unwanted evaporation and seepage. Even more disconcerting to us, there are now enough applications to divert on file with the Nebraska Department of Water Resources to more than dewater the Platte. In other words, the proposed diversions add up to more water than now flows down the river. And this doesn't even take into account the proposals for diversion on the North and South Platte in Colorado and Wyoming.

We oppose all future diversion until all parties come to view the river as a system and first plan for its future.

2. PLUM CREEK RESERVOIR

Prairie Bend sponsors have concluded that in order to meet irrigation demands and augment flows during critical periods, that an offstream storage reservoir must be built upstream and outside of the project area. It is to be called Plum Creek.

Even though the storage and release regime of this structure would partially meet the needs of downstream interests, the residents of the area--Gosper County and the community of Elwood--have strenuously asserted that it represents a major disruption. These people already endure the presence of two other major reservoirs built as part of the old Tri-County system and they have made it abundantly clear that additional lake-oriented recreation opportunity and lacustrine habitat are not needed or wanted in their area. The land inundated and surrounding this new reservoir could be lost from the tax roles, and as always, a number of families will have their homes and farms snatched away by condemnation. They are victims of their local topography. This type of solution would never meet Sierra Club's criteria for cost/benefit in order to supplement river flows.

3. ECONOMICS

Are additional irrigated feed grains needed? NO! The history of agriculture in the United States is one of uninterrupted surplus and excess. In colonial times, the price of barley was so low that it was unprofitable to attempt even to move the grain to the market, so the enterprising yankees resorted to a business tactic equally popular today, value added. They turned large quantities of very cheap grain into a much more valuable commodity with a very substantially condensed volume--whiskey. So it has been during the past two centuries. A student of U. S. commodity history has no famines, or even shortages or rationing to learn of. Instead, we have needed to keep track of a series of disposal events, including gifts of food to needy countries, frequent destruction and dumping of surpluses (e.g., milk dumped on the ground, shooting and burial of excess calves, potatoes used as pig feed, regular destruction of excess fruit and vegetables) and, most important, the evolution of a system of government subsidies which supplements the incomes of feed grain, cotton, tobacco, rice, wheat, sugar, dairy, and other producers. These subsidies are paid when the commodities are in excess supply and the prices low, which seems to be perennially. It is a safe bet that Prairie Bend water would be used to irrigate crops which will be in surplus, and subsidized, for decades into the future. The evidence is overwhelming that these crops are not needed, and there are no trendlines of production and consumption from which an inference or extrapolation can be drawn that they will ever be needed.

It is difficult to comment with civility on the average projected corn price the Bureau has selected for its economic justification of the project, $3.38 per bushel. We hope you recognize the sheer fantasy of this number. Only for two years during their entire lives have central Nebraska farmers been able to sell corn at or near $3.38 per bushel. Today, cash prices around the state vary between about $1.41 and $1.54. Current net loan rate in my county is $1.81.

4. INSTREAM FLOWS

The sponsors of Prairie Bend do not recognize the value of instream flows, neither in economic nor in intrinsic terms. Because Prairie Bend was proposed as an economic venture, instream flows could be compared from the perspective of economic benefit. It is well known that the Big Bend reach of the Platte, from Overton to Grand Island, serves as a resting and stopover site to a half-million migrating Lesser Sandhill Cranes. This is the largest concentration of cranes anywhere in the world. The viewing of this annual phenomenon is inspirational even to the casual observer. Tourism numbers and dollars have not been adequately compiled, but several riverside communities either co-operate or compete for the image of: "gateway to the Big Bend of the Platte," or, "Sandhill Crane CApitol." Tourist advertizing and information appears on area billboards and in travel brochures. Visitors come from all over the U. S. and from several foreign countries each year to see the cranes and other waterfowl. There is general agreement that depleted flows in the river would extirpate the cranes.

In addition to wildlife economic benefits, it is appreciated by all that the Platte River and its adjacent sands contain the state's most abundant, pure, and well-utilized sources of potable water. Although only the city of Fremont takes drinking water directly from the river, most of the state's population depends on water from well fields in adjacent sands, including residents of North Platte, Lexington, Kearney, Grand Island, Columbus, Lincoln, and much of Omaha. As flows in the river are incrementally diminished, the river well fields could either run short of water, or be contaminated by agricultural fertilizers and pesticides which are now present in adjacent aquifers. In no way would the production from irrigated lands in the Prairie Bend area compensate the state for a shortage of water (i.e. more expensive) to the majority of its citizens.

In summary, because of the lack of a co-ordinated river management plan, the adversity of Plum Creek Reservoir, a faulty cost/benefit analysis, and lack of recognition of the benefit of instream flows, the Nebraska Chapter of Sierra Club objects to the proposed Prairie Bend project and encourages the U. S. Congress not to authorize further funding

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STATEMENT OF THE KANSAS STATE BOARD OF AGRICULTURE

The purpose of this letter is to seek your support for the implementation and funding of Title XII of the Water Resources Development Act of 1986 (P.L. 99-662) related to dam safety. The act amends P.L. 92-367 to create the "Dam Safety Act of 1986" and, among other things, authorizes the appropriation of $13 million per year for five years beginning in Fiscal Year 1988 for matching funds to be distributed among those states that have an established dam safety program approved under the terms of the act. Many states, including Kansas, are seriously lacking in their dam safety programs. We believe Congress made a wise decision in authorizing this program; the cost of dam failures in recent years has been hundreds of human lives and massive economic damage in several cases. Though the safety of non-federal dams lies with the states, the federal government is burdened with disaster assistance when dams fail.

In Kansas, the Division of Water Resources, Kansas State Board of Agriculture, is the state agency responsible for dam safety. Pursuant to the provisions of K.S.A. 82a-301 to 305a the State of Kansas currently has most, if not all, of the authority needed to meet the criteria of the Dam Safety Act of 1986 but does not have an adequate staff or funding to carry out all of the provisions of the act, especially in the area of on-going periodic inspection of dams on a three to five year basis as required. Additional funding from the federal government would be extremely helpful to the State of Kansas in developing an adequate dam safety program so that life and property can be protected from a tragic dam failure that could result in the loss of life.

The State of Kansas recognizes its responsibilities to regulate and inspect unsafe dams in order to protect the public safety. The state has been working with the owners of known unsafe dams and has made significant progress in that several unsafe dams have now been upgraded so that they are no longer considered unsafe. However, sufficient staff and state resources are not available to pursue remedial measures for the remaining unsafe dams as quickly as deemed necessary nor to be able to carry out an adequate inspection program for other dams located in the state. We believe the provision restricting the availability of federal funds to only those states that have an adequate dam safety program and are willing to provide the required 50% matching funds is reasonable and will provide an incentive for states to develop better programs, as we are trying to do here in Kansas.

We believe that the states desperately need and can effectively use $13 million per year in building their dam safety inspection and enforcement programs, and that these funds should be incorporated in the Corps of Engineers budget for Fiscal Year 1988. The Corps should also move now to activate the National Dam Safety Review Board established by Title XII.

The needs for training of dam safety inspectors and for research to improve inspection techniques should also be fully funded as provided for in Title XII. The states have consistently asked the federal government for training assistance, and this deserves a high priority.

We recognize that Title XII is a small part of P.L. 99-662 and the needs are great to implement many of the projects and programs authorized. However, we believe the protection of the safety of our citizens should rank very high as a national priority.

Thank you very much.

LETTER FROM RICHARD T. DEWLING, COMMISSIONER, NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

March 2, 1987

Honorable J. Bennett Johnston, Jr.
United States Senator
Chairman, Energy and Water Development
Room 131, Senate Dirkson Building
Washington, DC 20510

Dear Senator Johnston:

The New Jersey Department of Environmental Protection has realized significant benefits for New Jersey by means of projects developed and implemented through the U.S. Army Corps of Engineers. Our working relationship with the Corps of Engineers continues to be of major significance to us and to the residents of New Jersey. We therefore want to take the opportunity to present our comments to you regarding the Corps of Engineers Civil Works Budget for Fiscal Year 1988. Those comments are enclosed.

As one example of our relationship with the Corps, we, in this Department, have committed staff for an intensive and ongoing effort to work closely with the New York District to develop comprehensive flood control in the Passaic River Basin of New Jersey. The first three years of that extraordinary effort have just been completed with a great deal of progress to show. We look forward to continuing our commitment to work together toward accomplishing mutual goals.

A second example of successfully working with the Corps must be a recognition of progress on navigation projects along the New Jersey coast which have resulted from our work with the Philadelphia District. Although the major focal point is Barnegat Inlet, the Intracoastal Waterway and other inlet projects are cumulatively of tremendous importance to us.

Please consider our support and our request for additional funds as a recognition of a successful partnership which we want to continue.

Thank you for considering these comments in your deliberations.

Sincerely,

Richard T. Dewling

STATEMENT OF THE NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

The New Jersey State Department of Environmental Protection has reviewed with great interest the Civil Works Budget Request for the U.S. Army Corps of Engineers for fiscal year 1988. Projects which affect New Jersey involve both the New York and Philadelphia Districts of the Corps. We are pleased to extend our general support for the items included in that budget. It is, however, important for us to emphasize and comment on some of those items of particular importance to New Jersey.

The $300,000 for a survey of the Hackensack River Basin for purposes of flood control feasibility is an item which we support. We would like to point out however, that New Jersey views this particular survey as one which is on-going, having been initiated prior to the passage of the Water Resources Development Act of 1986. Therefore, in our opinion, this project should not require cost sharing for the feasibility study.

We are also very supportive of the $1.4 million dollars designated for pre-construction engineering and design for flood control in the Raritan River Basin, Green Brook Sub-Basin. We were particularly pleased to note that the authorization for that project contained in the Water Resources Development Act was the plan selected by New Jersey for implementation. We feel that the construction of that particular plan will convey the greatest benefits to those who live, work and play in the Green Brook Sub-Basin as well as those who travel through it and therefore it is our intention to work for implementation of that authorized plan. We feel that we are making very positive gains in this portion of the Raritan River Basin.

While on the subject of the Raritan River Basin, we would like to point out that there is a need for an additional $200,000 which would allow the Corps of Engineers to complete the modeling they have undertaken. We recognize the need for that segment of the Raritan River work and request funding at the $200,000 level.

Again, for the Raritan River Basin, we would like to request an additional $200,000 to be used for planning a flood warning system for that river basin. Our request for such a warning system is a result of working in concert with the Corps of Engineers to develop a similar system for the Passaic River Basin. We have advanced to the point where construction of the Passaic system will take place during calendar year 1987. The partnership developed with the Corps for the project in the Passaic Basin should serve as an example of success; one which we want to expand into another area of need; the Raritan Basin. We think highly enough of the state/federal partnership success to support a second early warning undertaking for New Jersey.

We have already alluded to the fact that in New Jersey we have made a major effort over the last several years toward achieving flood control in the Passaic River Basin. It is therefore particularly gratifying to see funding for pre-construction engineering and design for interim projects in that basin on the Ramapo and Mahwah Rivers at Mahwah, New Jersey and Suffern, New York; on the Ramapo River at Oakland, New Jersey and on the Lower Saddle River. For these projects, we have seen completed surveys, authorizations which now appear in the Water Resources' Development Act of 1986, funds appropriated by New Jersey for nonfederal cost sharing and now funds requested for the design phase; real progress in our estimation. The major flood control project in the Passaic River Basin is shown in the budget as Passaic River Basin Study, Phase I, and the funding for that receives our support. However, we have made sufficient progress in the planning studies to warrant moving forward so that the

Corps of Engineers can begin pre-construction engineering and design on this major central project for the Passaic River Basin. Therefore, while we are indicating our support for what has been shown in the budget, we are asking for an additional $2 million which would allow the Corps of Engineers to begin the engineering and design phase of that mainstem Passaic River Flood Control Project. We have been genuinely encouraged at the progress to date and therefore request that every effort be made to maintain the momentum developed in solving the flooding problems in the Passaic River Basin. It is our opinion that the best means of doing that is to provide the funds for design to begin as soon as possible.

A provision was made in the Water Resources Development Act of 1986 for a $50,000,000 project in the Passaic River Basin to acquire flood prone residential properties; an activity which has commonly come to be known as a buy-out. Such a project serves to reduce flood damages by buying up frequently flooded properties on a voluntary basis and removing the structures; thereby removing the threat of flood damage to those structures. It provides a means whereby property owners can sell their properties to government agencies and eliminate having another buyer move into flood threatened property and it reduces the potential for personal injury and even death due to flooding by moving people out of flood prone areas. It should be noted that such a project has already been undertaken by the State of New Jersey through a $5,000,000 appropriation by the New Jersey Legislature. That project is currently seeing progress and success. Based on our own success within the State of New Jersey and the potential for a larger and similar federal program, we are requesting a $400,000 appropriation for the Corps of Engineers to plan how the buy-out will take place.

Following a period of greatly reduced funding, the Army Corps of Engineers' Section 22 Planning Program has provided meaningful levels of funding for which New Jersey is most appreciative. There are several planning projects for which we request funds in FY 1988 through this program. The total funds requested for the projects proposed are $300,000.

We request the Corps of Engineers to evaluate the engineering feasibility of constructing additional water transmission lines from the mainland to the New Jersey barrier islands or of other means to reduce the vulnerability of these islands to the loss of their existing water supply. This area is particularly susceptible to serious storm damage and disruption of services. We are anxious to provide for an uninterrupted water supply which will be adequate and dependable now and for future growth. The estimated cost for this work is $100,000.

We ask the Corps of Engineers to help us in the testing of interconnections. The Great Notch Multiple Exchange Facilities allow four major systems in northeastern New Jersey to transfer water among themselves. As much as 75 mgd can be exchanged between certain systems. These facilities are in need of evaluation and hydraulic testing so as to insure that adequate water transfers can be made in the event of a water emergency. We estimate the cost for this work to be $75,000.

We request that the Corps of Engineers prepare floodway and flood hazard area maps and profiles utilizing the new topographic mapping and hydrologic HEC-2 model for the reach of the Delaware River within the Township of Hamilton, the City of Trenton, the Town of Belvidere and the Townships of White and Knowlton. Where possible, these new floodway limits and flood profiles should be coordinated with FEMA Flood Insurance. Over the last decade the State has performed the hydrologics and prepared the mapping covering most municipalities bordering on the Delaware River. The proposed project utilizes the new ACE data and will complete our delineation for the reach of the Delaware from the Rancocas Creek upstream through Knowlton. The anticipated project cost is $50,000.

We also request that the Corps of Engineers be funded to undertake a feasibility study for flood control projects in one or more (depending on its size and complexity) of the priority hydrologic planning units (HPU) identified in New Jersey's Statewide Flood Control Master Plan. These are areas where flood damages are significant, but where the needed studies to develop flood control measures have not been conducted. The actual selection of the specific HPU(s) will be made jointly by the State and the Corps of Engineer's staff. The estimated cost of this work is $75,000.

The Department is also extremely pleased with the budget for projects administered by our Division of Coastal Resources; projects through the Philadelphia District of the Corps dealing primarily with navigation and beach protection. It should be noted that New Jersey has made provision for necessary cost share funds for the budgeted projects and we look forward to implementation. Of major significance to us is funding to continue the construction at Barnegat Inlet. We are extremely anxious for the improvement of this important inlet and strongly support the $6 million budget amount. Although the dollar amounts are less, we are also very supportive of navigation work at Cape May Inlet, Great Egg Harbor Inlet, Corson Inlet, Townsend Inlet and Hereford Inlet.

In addition, we are concerned with and supportive of the budget funding of measures to maximize control over coastal flooding and erosion as addressed in projects for Absecon Island, Brigantine Island, Cape May Point and Long Beach Island.

In that same vein we want to reiterate New Jersey's support for an additional $500,000 to deal with severe erosion problems along the shores of Delaware Bay which is causing problems in both New Jersey and Delaware.

Other budgeted projects, while not specifically mentioned, do receive our support.

STATEMENT OF THE BELLE FOURCHE IRRIGATION DISTRICT

I am again writing in regard to President Reagan's FY 1988 Budget and the proposed rescissions of funds for FY 1987. The following statements have been prepared for testimony in anticipation of forthcoming hearings on the FY 1988 budget.

We request your approval of funds in an amount which will permit continued progress in the rehabilitation of the Belle Fourche Project. We are willing to accept funding adjustments to help resolve the deficit problems, however we are unwilling to accept the drastic cut as proposed in the administration's FY 1988 budget which will bring planned construction progress to a halt. Since construction funds have been eliminated in the FY 1988 budget, it is proposed that rescissions also be made in FY 1987 funds for contracts that were planned to start in FY 1987 to be completed in FY 1988. The 1987 funds have already been approved by Congress.

The President's FY 1988 budget proposes funds for the Belle Fourche Project in the amount of $980,000. Planned funds for FY 1988 are $5,900,000. The $980,000 will permit the USBR staff to continue planning and design, and we fully support this, however this amount will not allow for any construction on the Project. The USBR is now fully staffed here on the Belle Fourche Project, and it is only good common sense that construction should continue along with the design. Construction funds must be included in the budget to prevent inefficiencies and increased costs to the authorized Rehabilitation Program.

We are unwilling to accept any rescission of funds for FY 1987. It will cause, and has already caused, a breakdown in the excellent progress in the rehabilitation of the Project. The USBR has cancelled one contract, and other contracts, including replacement of the Diversion Dam, likewise will be affected. Congress has approved funding in the amount of $3,900,000 for FY 1987, and now, without approval of Congress, the Administration proposes rescissions amounting to $1,127,000. We ask that your committee prevent this from happening.

The USBR and the District have entered into a drainage and minor construction contract so that a portion of the rehabilitation work can be performed by the District. The District has purchased equipment and materials necessary to perform the work. If funding is withheld, this equipment will be idled, resulting in uneconomical use of program funds.

Contractors who have been awarded contracts have moved equipment and personnel here from other states at considerable expense, and will now have to seek work somewhere else if funds are reduced to the level proposed by the Administration. This will cause increased costs to the contractor which would result in higher bids at a later date. The bids submitted so far have been very reasonable, coming in well below engineers' estimates. As you can see, this is another instance of the impact the budget cuts would inflict on the Rehab Program.

Unemployment will result for a great number of people, not only those working on the Project, but also the people that supply goods and services if the proposed cuts are allowed to stand.

We believe that the Administration's proposed budget places an excessively high percentage of cuts on South Dakota projects. The total proposed rescissions for all of the Department of Interior budget amount to 4.8 % for FY 1987, while the proposed FY 1987 rescissions for the Belle Fourche Project amount to 29%. The total FY 1988 budget proposed by the USBR has been increased by 9.4%, yet the Belle Fourche Project planned funds of $5.9 million have been decreased by 83.4%. This reduction, we feel, is not a realistic or responsible decision.

I again call your attention to the fact that the Federal Government has never honored its committment to South Dakota under the Pick-Sloan Missouri Basin Program, in return for all the land it gave up to provide flood control for downstream states.

In November of 1983, the U.S. Congress gave overwhelming approval for reauthorizing the Project under the Pick-Sloan Program for the purpose of rehabilitating the Project, which President Reagan later signed into law. The criteria that justified reauthorization now justifies funding so rehabilitation may proceed in a continuous and efficient manner.

In closing, I now ask your support in getting FY 1987 funds restored, and FY 1988 funding at a level that will permit orderly, efficient construction to proceed on the Belle Fourche Project.

STATEMENT OF DOUG CAMERON, SEWANEE, TENN.

Reference: FY 1988 Appropriations for the Tennessee Valley Authority

TVA was founded with a vision. This vision was that government could act holisticly and positively to change the economy of a region so backward that it could well have been a third world country. The idea was that a quasi-governmental corporation would be formed with many of the freedoms of private enterprise, but with the powers and and general welfare goals of government.

The very real needs of the Tennessee Valley which the 1933 Act addressed were navigation, flood control, and fertilizer and power production. These weren't the goals of the new agency, rather they were the means by which it could strive for the vision of bringing the under-developed seven-state region into the twentieth century.

With the navigation and flood control problems substantially behind us and the research and development of fertilizer mostly the province of private enterprise, the agency has concentrated its efforts on power production. All of the other work of the agency is separated from and subjugated to the production of power. Power, in fact, is financially self-sufficient like any priavte sector utility, while the non-power budget is appropriated from the taxpayers of the United States. (The non-power operations, because of budget attacks and lack of an over-arching purpose, have become a series of disjointed programs.) Even when degradation in Valley water quality can be directly linked to the operation of dams for flood control, navigation, and power production, TVA expects the taxpayers of the nation to pay to correct these problems instead of the ratepayers and shipping interests who benefit...this is clearly the case in the problem of low dissolved oxygen resulting from the presence of TVA dams.

Power production seems to have become the single purpose of the agency in the eyes of the Board. The vision has been lost! Now the agency which was established to bring prosperity to the valley is squandering our children's birthright. Just this week (March 30 to April 3), TVA acted to increase the flow past a major polluter in upper East Tennessee so that more pollutants could be dumped in to the Holston River (And we wonder why the commercial and sport fishing industries are dying downstream?). Also this week, the agency acted to destroy the efforts of generations of small farm families in Giles County, Tennessee so that it could have another $10 million to spend on the non-power programs which are supposed to help the farmers of the valley – the act in question being the sale of phosphate rights under these farms, rights which were sold to TVA for a pittance fifty years ago with the understanding that they would only be used for munitions production in times of national emergency.

The need for the original vision is still there. There is still a need for a forward-looking, lean, quasi-governmental agency to work for the economic development of the rural Tennessee Valley. The small farms and small towns of the rural South are suffering economic disaster. The small mills that came to the region to exploit the low wage workers have moved to other third world countries. Some new investments have come from foreign countries, such as Japan and Detroit, to exploit the hard-working farmers on the fringes of the cities, but the gap between the boomtowns and the rural areas continues to widen. Banks have failed and many farmers can't even find the money to plant this spring.

In another example, the counties of the northern Cumberland Plateau in Tennessee, Kentucky, and Virginia are very much like a third world country where the natural resources have been mined for the benefit of the more developed areas and the land left wasted when the coal seams ran out. No wonder these counties lead the area in unemployment, illiteracy, poor health care, high taxes, and low incomes. The needs are there, but the tax base has been carted away to be coughed out of the smokestacks of more developed industrial areas. TVA has participated in this destruction and should share in the responsibility to reclaim the area.

TVA has done its job well, but flood control, navigation, fertilizer, and power are problems of fifty years ago. There is a job for TVA to do, but it has very little to do with getting nuclear power plants on line. The job which lies ahead is to redefine the vision to meet the challenges of the next twenty years. Environmental quality and the rural economy are part of that challenge.

I suggest that Congress, in granting TVA its non—power appropriations for FY 1988, charge the agency to return in a year's time with a new vision and challenge for the next fifty years. Such a plan should not be developed in the isolation of Knoxville's twin towers, but should be a result of consultation with the people of the Tennessee Valley. (TVA has not been a good listener; in this aspect it has demonstrated the worst qualities of government and private enterprise.) If TVA cannot demonstrate an ability to meet the challenges of the next generation, then perhaps it is just a utility – and, if that is the case, there is strong evidence that private enterprise does a much better job of operating such businesses.

STATEMENT OF THE PRESQUE ISLE STATE PARK ADVISORY COMMITTEE

In the matter of appropriation of Federal funds for erosion control for Presque Isle Peninsula.

BY: Presque Isle State Park Advisory Committee (A committee established in 1986 as an advisory body to the Secretary, Pennsylvania Department of Environmental resources. Constituted of citizens representing the public interest, government, and local business communities).

TO: Honorable Arlen Specter

FOR: Presentation to Senator J. Bennett Johnston, Chairman of the Sub-Committee, Energy and Water Development.

PHYSIOGRAPHY

Presque Isle is a unique and significant coastal feature on the south shore of Lake Erie, at Erie, Pennsylvania. It is a compound, recurved sandspit that arches lakeward about two and one-half miles from an otherwise straight shore. The Peninsula has a lake shoreline of about six and one-quarter miles from its narrow connection with the mainland to its distal end where it turns sharply shoreward. The Peninsula is an old-age geological feature which is migrating eastward into deep water. The rate of migration exceeds the rate of growth when there is a deficiency of sediment moving in the natural system. At these times, the migration translates into shore erosion that threatens to breach the narrow "neck" that fixes the Peninsula to the shore. In addition, there are various sections of the Peninsula that are considered high energy beaches where erosion occurs as the result of each severe storm. The processes responsible for the formation and geological evolution of the Peninsula will also be the processes that will be responsible for its eventual destruction unless a means is found to reduce the erosional impact of Lake Erie and, simultaneously, increase the amount of sediment available for beach building.

THE HARBOR AND THE CITY OF ERIE

Presque Isle Peninsula serves as a protective arm forming a natural harbor, comprising Pennsylvania's only lakeport. The harbor was well suited for the history that would unfold from the earliest French fort and portage, through British occupance to the construction of Admiral Perry's fleet during the War of 1812. The early settlement around the fort grew to become the City of Erie. Erie has a long history of commerce related to lakes trade and commercial fishing. Erie at one time had the largest freshwater fishing fleet in the world. Today, the port sees visits by ocean going freighters from all over the world. Several Erie industries are dependent on the harbor and its facilities as a means of reaching world markets. Bayfront development has been a mix of lake-related commerce and industry, residential and recreational use, and utilities. The bayfront is in a state of transition as the importance of lake and harbor resources have found a resurgence if interest. This new interest has been promoted in large measure by the impact of the Federal Coastal Zone Management Act.

THE PENINSULA

The Peninsula is a low-lying feature characterized by a succession of dunes and lagoons that get progressively younger easterly to the distal end. As a consequence of sedimentary growth, the Peninsula also experiences ecological succession.

One thousand years of evolution can be seen on the spit today. As a result the Peninsula is considered unique and is well known nationally and internationally as an important and fragile biological system.

Because of the sandy beaches extending some seven miles along the lakeward face of the spit, the Peninsula is also a recreational asset. In fact, the Peninsula has an annual use recorded at between four and five million user days annually.

The entire Peninsula is administered by the Commonwealth of Pennsylvania as a State Park. The Commonwealth has made a strong commitment to this, the most heavily subscribed park in its system. The costs of maintaining the infrastructure of the park are increased because of the impact of erosion on roads and facilities. The commitment has extended to cost sharing major Federal efforts to combat erosion. Presque Isle has become the backbone of a multi-million dollar tourist industry for the region.

HISTORY OF EROSION AND EROSION CONTROL MEASURES

Federal involvement in the protection of Presque Isle dates back to the original Erie Harbor project in the early 1800's. At that time the harbor entrance was improved but work was also done to prevent a continuing problem at the neck. It was determined that periodic breaching of the narrow neck would threaten the utility of the harbor. To protect the public interest the Federal government has, since 1823, continued in it attempts to prevent erosion of the spit.

In the 160 years since 1823, the United States Government has provided the necessary funding to implement a variety of shoreline erosion methodologies. Research has provided an ever increasing body of information so that coastal engineers today can predict the relative success or failure of these technologies. In 1972, the Department of the Army, Corps of Engineers working under a mandate of a Cooperative Beach Erosion Control Project with the Commonwealth of Pennsylvania, developed an engineering report that considered no less than five viable alternatives for beach erosion control. Sought after was a more or less permanent solution to the ongoing problem of beach erosion. These efforts had strong support from the Erie region. It is recognized that an important independent benefit of erosion control to protect Erie's harbor is the enhancement of recreational opportunities provided by stabilized beaches. Through a series of public hearings and workshops the Corps of Engineers worked with local publics to promote understanding of the problem and the need for a major investment in erosion control.

Five methodologies were examined. A system of offshore barriers, called rubblemound, detached breakwaters was favored by the Corps and, consequently by most concerned publics, as the most viable of alternatives. Other alternatives included a sand recirculation system, a series of groins, a solid offshore barrier, and a do-nothing approach. Considered viable at that time were the recirculation system (also favored by the Corps) and the groin approach.

Since 1972-73 local interests have been frustrated by a seeming lack of action on what has been an ever increasing problem. There have been times when funding for erosion control seemed imminent only to have the allocation die for want of an appropriation. The past fourteen years have been frustrating to all concerned. Intermediate and stop-gap methodologies have managed to provide a measure of protection to Presque Isle over the years. During times of lower lake levels, these intermediate measures have almost been enough. However, water levels on Lake Erie have been at record highs since 1973. Researchers say that the high levels are likely to persist.

The Presque Isle State Park Advisory Committee, acting as an advisory body to the Commonwealth of Pennsylvania, supports the concept of continued Federal funding in support of erosion control for Presque Isle. We see the need as apparent. Erie is dependent on the protection offered by this natural Peninsula. The region derives a substantial income from the tourist activity surrounding the recreation value of the State Park. The terrestrial and aquatic acosystems and their continuing evolution are important to all species and most particularly to those species of special concern.

The Committee very strongly urges Congress to consider appropriating funds allocated earlier this year. The release of these funds will enable the Corps of Engineers to incorporate this project into their funding cycles so that an erosion control methodology can be instituted during the next fiscal year.

By way of reflecting the Committee's views, we offer the following Resolution --

WHEREAS, Presque Isle Peninsula is a protective barrier forming the finest natural harbor on the Great Lakes and,

WHEREAS, the City of Erie provides an important link in international shipping via the St. Lawrence Seaway and,

WHEREAS, several national and international corporations are dependent on these port facilities and,

WHEREAS, lakefront development represents a multi-billion dollar investment in port, utility, manufacturing, commercial, residential, and institutional futures and,

WHEREAS, this natural harbor provides a harbor of refuge for commercial shipping, commercial fishing, and the boating public and,

WHEREAS, continuing record high water levels on Lake Erie threaten the viability and integrity of this natural barrier and,

WHEREAS, the construction costs involved in replacing the natural barrier in the event of its loss with concrete and steel would range in the hundreds of millions of dollars and,

WHEREAS, additional benefits accrue as a result of the continuing existence of the Peninsula in the form of recreation and the commerce associated with recreation, and

WHEREAS, Presque Isle is integral to the Atlantic and Central Flyways for migratory fowl and several species of special concern including some that are rare and/or threatened and,

WHEREAS, Presque Isle is unique as an ecosystem providing a rare combination of wetland and upland habitats for species of special concern including many that are rare and endangered and,

WHEREAS, valuable property on the Peninsula including two Federal Reservations are threatened and,

WHEREAS, stop-gap measures and experimental procedures, while important in retarding continuing erosion, have failed to provide the required protection and,

WHEREAS, the Commonwealth of Pennsylvania is making a continuing and significant contribution to erosion control.

NOW, THEREFORE, BE IT RESOLVED

THAT, the Presque Isle State Park Advisory Committee favors continuing Congressional involvement in erosion control methodologies through its agent, the Department of the Army, Corps of Engineers and,

THAT, the Committee favors immediate consideration for the release of Federal dollars to implement one of several erosion control methodologies developed by the Army Corps of Engineers, without prejudice for, or in opposition to, any particular of these methodologies and,

THAT, the Committee stands ready to defend this resolution with fact and constituency support and,

THAT, the Committee favors continuing support for appropriate intermediate maintenance of Presque Isle beaches through a program of sound engineering and geological design and,

THAT, the design of choice shall be continued by expanded practice of sand nourishment as means of providing the natural protection that beaches afford any coast and,

THAT, the Committee expresses its appreciation to Congress for its past and continuing support for Presque Isle Harbor and,

THAT, the Committee also expresses its appreciation for being permitted to present this resolution to Congress.

In Witness Thereof:

4/16/87

Edward J. Donn, Chairman
Presque Isle Advisory Committee

Date

Paul D Knuth

4/16/87

Paul D. Knuth, Chairman
Erosion Control Sub-Committee

Date

STATEMENT OF THE OHIO DEPARTMENT OF NATURAL RESOURCES

Mr. Chairman and Members of the Subcommittee, I am Joseph J. Sommer, Director of the Ohio Department of Natural Resources, and Governor Celeste's liaison with the U.S. Army Corps of Engineers. This testimony represents the views of the State of Ohio with regard to the Administration's funding requests for the Federal Fiscal Year 1988 (FFY) budget on water resources development.

As you are aware, the total budget request for the State of Ohio, as contained in the President's FFY 1988 budget, is over $71 million. This includes the identifiable categories of water project funding of surveys, preconstruction engineering and design, construction, and operation and maintenence of existing projects. The $71 million represents a 35 percent increase above the FFY 1987 budget proposed by the President for our state. We recognize that the increase for Ohio, as well as for many states, is largely a result of the new cost-sharing initiatives included in the Water Resources Development Act of 1986. We welcome the new commitment of federal financial resources, and accept the challenge of meeting our increased obligations at the state level to assist local governments in helping to finance the non-federal portion of the "new generation" of water resources projects.

Although the proposed FFY 1988 budget for Ohio projects is an improvement over previous years, there are a few critical deficiencies that I would like to bring to your attention.

CLEVELAND HARBOR

Cleveland and many other industrial-based cities in the midwest and eastern states have gone through a challenging economic period. We are proud of our accomplishments and initiatives to stabilize our industrial base and address changing commercial sectors. We feel fortunate in having the tremendous natural resource Lake Erie offers, and have implemented significant lakefront redevelopments to improve our commercial base and to assist with our ongoing industrial development.

By June 1988, the Ohio Department of Natural Resources will have invested $9 million toward redeveloping the Cleveland Lakefront with the Inner Harbor project. This project will function as the cornerstone for a massive lakefront redevelopment effort bringing jobs, trade, and economic benefits. This expeditious initiative on the part of the state involves project components that qualify for federal funding as contained in the recently authorized Water Resources Development Act, with $27 million authorized for Cleveland Harbor improvements. The state will be unilaterally undertaking approximately $6.1 million of project components that qualify for funding under the referenced authorization. These components include a 100' wide navigational channel, basin walls and a protective breakwall structure. We are seeking assistance from the federal government, in order to realize a true partnership of local, state and federal governments. The balance of work remaining involves the bulkheading of the east, north and west walls of Pier 34, with an estimated cost of $7.5 million. We are seeking credit for the state's $6.1 million expenditure to offset non-federal costs associated with this improvement. However, no funding has been included in the President's budget to enable the Corps of Engineers to begin the balance of these remaining work items. We respectfully request the full support of this Subcommittee in providing the necessary funding to allow the Corps' work to proceed.

MAUMEE BAY STATE PARK SHORE PROTECTION PROJECT

Another project not included in the proposed FY '88 Budget and of vital importance to Ohio is the proposed shore erosion protection project along Lake Erie at Maumee Bay State Park. This $15.9 million proposal authorized by Section 501 of P.L. 99-662, to be cost shared with the Corps of Engineers on a 50% federal - 50% non-federal basis, is intended to protect a $30 million recreational complex planned for Maumee Bay State Park. The State of Ohio has already expended $12 million in developing the park to date and will expend an additional $30 million for the construction of a lodge, cabins, golf course and other support facilities.

In anticipation of the now authorized federal project, ODNR initiated construction of the project's eastern segment this past year. We have expended $3.2 million on completion of this segment and now await federal funding through the Corps to finish the work. In addition, we are seeking appropriate credit for the non-federal funds already invested in the project. In FY '87, through the efforts of Congresswoman Marcy Kaptur of Ohio and this Subcommittee, $250,000 was added to the Corps' budget to allow for completion of Preconstruction Engineering and Design. However, because the proposed project is not in agreement with the Administrations' budget priorities and policies, a decision was made not to apportion the funds to the Corps' Buffalo District. As you may be aware, efforts are underway to convince the Administration of the importance of this project and to have the appropriated funding released to the Corps as soon as possible.

We are optimistic that this will be accomplished and that the Corps will use the funds to complete all preconstruction work by the Spring of 1988. Accordingly, I am at this time respectfully requesting this subcommittee to include $500,000 in the FY '88 budget to allow for a construction start in the Summer of 1988. If we must wait until FY '89 for a construction start, we will effectively delay the project by another year, and thereby jeopardize timely construction on the state funded complex.

Mr. Chairman and members of the subcommittee, Ohio has a long history of cooperation with the Army Corps of Engineers in the joint development of our water resources. From the early days of the Muskingum River Basin development to the more recent improvements on the Scioto and Little Miami Rivers and the shoreline of Lake Erie, we believe the state, as well as its political subdivisions, has more than adequately demonstrated its role as "non-federal" sponsor. We have in the past, and will continue in the future, to do our part towards promoting a true partnership with the federal government in joint development and management of our water resources. However, it is becoming more difficult for us to meet our objectives and ultimately achieve our goals with the continued delays that we are encountering on projects such as the Maumee Bay State Shore Protection Project.

Therefore, what we are requesting for the Maumee Bay project a federal investment of $7.9 million, including the planning and engineering work, compared to an eventual state investment of over $40 million. The end result would be an outstanding public recreational facility for the people of Ohio, Indiana, Michigan and, I am sure, several other states as well. We sincerely believe that a construction start in FY '88 deserves your most positive consideration.

OHIO RIVERFRONT DEVELOPMENT

The Ohio Department of Natural Resources (ODNR) appreciates the support you have given to the proposed Ohio River Waterfront Development Study by the Corps of Engineers. As you know, ODNR and our "Ohio River Congressional Delegation", including Ohio Senators John Glenn and Howard Metzenbaum, have supported this effort since the House Public Works and Transportation Committee adopted the authorizing resolution on August 8, 1984. However, despite all of our efforts, the Administration refuses to spend the funds appropriated by the Congress as contained in the conference report language.

Thanks to your persistence, the FY '87 Continuing Resolution (P.L. 99-591) included additional funding to initiate the Ohio River Waterfront Development Study. However, I have been advised that once again the Administration is refusing to apportion the $200,000 that was appropriated by the Congress.

The continued refusal of the Administration to expend appropriated funds on the Ohio River Waterfront Development Study is unfortunate and, quite frankly, frustrating. The Ohio Department of Natural Resources has focused increased attention on the Ohio River as a major resource capable of providing additional commercial and recreational benefits to the public. Ohio is looking at increased access to the river for enhanced fishing and boating opportunities. In addition, ODNR is cooperating with the Ohio River Redevelopment Task Force, a body formed by the Ohio General Assembly to, among other things, evaluate the best commercial, recreational and residential uses of the Ohio Riverfront area.

Accordingly, I believe the Waterfront Development Study proposed by the Corps of Engineers will be extremely beneficial and complement efforts currently underway at the state level. I would appreciate anything you can do to help ensure that the funds, already appropriated, are expended in fulfillment of the intent of Congress.

WEST COLUMBUS FLOOD CONTROL PROJECT

After many years of study, the Army Corps of Engineers has developed a plan to protect an area on the west side of Columbus from the ravages of flooding. The area has a history of flooding dating back to 1828. However, the March 1913 flood was the greatest flood resulting in the loss of 93 lives and damaging or destroying 4,000 homes. As part of the Central Ohio Survey work the Corps has developed a levee plan of protection for a 1,200 acre area adjacent to the Scioto river in downtown Columbus. According to a 1982 flood damage survey, 4,200 residential structures and 470 commercial structures including several schools, hospitals, and health care facilities would receive protection as a result of the project.

In terms of costs, according to the latest estimates and commensurate with the new cost-sharing provisions of the Water Resources Development Act of 1986, a $31 million initial total investment, with $7.7 million of that amount coming from a non-federal sponsor, will be required. The proposed project enjoys the support of the City of Columbus and federal, state and locally elected officials. The project proposal is vitally important to the community and is deserving of the necessary funding support from this subcommittee. In addition, I might add that, since the proposed project is a flood control measure, it should fall in line with the water project categorical priorities espoused by Army Assistant Secretary for Civil Works, the Honorable Robert K. Dawson.

At the present time, the Corps' survey report on the West Columbus Flood Control project is before the Corps Board of Engineers for Rivers and Harbors. With a 3.3 benefit cost ratio and strong local support, it is expected that the project will be approved by the Board in the near future. However, once the approval is given and absent any funding in the FY '88 proposed budget, all advanced planning on the proposal will cease. The next formal step will be full congressional authorization. In the interim, it would be possible for the Corps to continue its work if funding were provided for the project in the category referred to as "Preconstruction Engineering and Design." Because of our close working relationship with the Corps on other flood control measures throughout the State of Ohio, we maintain a liaison on anticipated budget capabilities. Accordingly, we believe the Corps could expend up to $500,000 during FY '88 on Preconstruction Engineering and Design for the West Columbus Flood Control project. If such funding were added to the proposed budget for FY '88, the Corps would be able to accomplish a year's work on the project that would otherwise be lost. In effect, work accomplished during FY '88 would conceivably allow for a construction start a year earlier than the now projected date of 1992.

WHEELING CREEK FLOOD PROTECTION

Section 602 (c) of the Water Resources Development Act of 1986 authorizes a project to prevent or reduce flooding problems in the Wheeling Creek Watershed in Ohio. This includes control of erosion of coal mine areas to reduce deposition of sediments in Wheeling Creek, removal of sediment deposits in Wheeling Creek, and other measures deemed appropriate by the Secretary of the Army and other agencies of the Federal Government and the State of Ohio. Section 612 of the same Act authorizes interim flood control measures to reduce flood damage in the vicinity of Goosetown, Wolfhurst, Barton, Cresent, Maynard, Blainesville, Fairpoint, Crabapple, and Lafferty at a total cost of $4 million to be cost shared with a non-federal sponsor.

The Ohio Department of Natural Resources participated in an inter-agency task force with the Army Corps of Engineers, U.S. Department of the Interior, the U.S. Department of Agriculture and local officials to address the problems of the Wheeling Creek watershed. A report was completed by the task force in March 1983 that summarized the extent of the water resources problems and identified strategies for implementation. Following review of the report, the Ohio Board on Unreclaimed Strip Mine Lands provided $325,000 to fund temporary emergency stream restoration measures to help reduce the flooding problem. These measures involved removal of accumulated sediment at critical locations in the upper reaches of Wheeling Creek, including Cresent, Maynard, Crabapple, Lafferty, and West Loretta. The recognized intent of the emergency measures was to help reduce flood damages for high frequency flooding events. The longer range projects to address the total problem include the reclamation of highly erosive abandoned mine lands through the ODNR Division of Reclamation's Abandoned Mine Lands program and the construction of flood control projects for more significant flood events. The flood control projects are to be accomplished by the Corps of Engineers.

With the passage of the Water Resources Development Act of 1986, we now look to the Corps to move forward not only with the interim measures but with the more permanent flood damage reduction measures included in the inter-agency report. Toward that end, we are advised by the Corps that the total estimated cost for the engineering and design work for these projects is $850,000. Of this amount, the Corps has an approved capability for FY '88 of $325,000 for initiation of the work.

We are looking for permanent solutions to the flooding problems that the many communities are experiencing along Wheeling Creek. In addition, we are prepared to continue our inter-agency work with the Corps and others to cooperate in resolving the flooding problems. Accordingly, positive action by this Subcommittee in providing the necessary $325,000 to the Corps' FY '88 Budget would be greatly appreciated.

SHEFFIELD LAKE COMMUNITY PARK RECREATIONAL NAVIGATION PROJECT (LAKE ERIE)

A proposed project for recreational navigation improvement has been developed by the Corps of Engineers for the Community of Sheffield Lake, Ohio, under the provisions of Section 107 of the 1960 River and Harbor Act, as amended. The proposal consists of construction of two breakwaters and excavation of an entrance channel leading to a locally provided boat launch ramp. The latest estimated cost is $600,000, with a benefit cost ratio of 1.7. State funding in the amount of $300,000 has been appropriated by the Ohio General Assembly and is available as the 50% contribution to the City of Sheffield Lake, non-federal sponsor for the project.

In the FY '87 federal budget, $200,000 was provided by the Congress to initiate the Sheffield Lake improvements. However, the Federal Administration did not apportion the funding to the Corps because of the recreational nature of the project.

We continue to believe that the proposed project is important and strongly desired by local interests. As previously mentioned, state funding remains available to pay the non-federal portion of the costs. Therefore, we would greatly appreciate your support in adding $300,000 to the FY '88 proposed budget for the federal portion of the cost.

CENTURY PARK BEACH RESTORATION PROJECT (LAKE ERIE)

Century Park is located on the east side of Lorain, Ohio and is operated by the City of Lorain for public use. This park, is extremely important for its public access to Lake Erie, but has suffered severe erosion over the past several years, particularly the last two years because of the unprecedented high water levels of Lake Erie. Under the provisions of Section 103 of the River and Harbor Act of 1962, as amended, the Corps proposes to reconstruct the deteriorated east and west "L" groins and to place beach fill material to arrest the erosion.

Although the total project cost was originally estimated at $300,000 and to be cost shared 70% federal and 30% non-federal, we are advised that the proposed project as it now stands will cost a total of $390,000 and is to be cost shared on a 50/50 matching basis. The Ohio General Assembly has appropriated $250,000 for the non-federal costs and park support facilities. However, despite the fact that plans and specifications have been completed and despite the fact that $100,000 was added to the Corps FY '87 Budget to initiate construction, nothing has been done. We are advised by the Corps that the $100,000 appropriation was not apportioned by the Administration for Century Park.

Your support in providing the necessary federal funding for the Century Park Beach Restoration Project will be most appreciated.

Thank you for the opportunity to provide this supplemental testimony in support of funding for the vitally needed Ohio water projects.

STATEMENT OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES

I am concerned about the Administration's decision to not request FY 88 funding to implement the dam safety provisions in Title XII of PL 99-662 (Water Resources Development Act of 1986).

Dam failures have resulted in some of the most catastrophic disasters in U.S. history and in large federal disaster costs. Consider these examples:

West Virginia, 1972: Buffalo Creek dam failure killed 125.

Idaho, 1976: Teton dam failure killed 14 and caused $1 billion in property damage.

Pennsylvania, 1977: Laural Run dam failure killed 40 people.

Georgia, 1977: Kelly Barnes dam failure killed 39 people.

Colorado, 1982: Long Lake dam failure killed 3 in Estes Park and cost the federal government over $5.6 million in disaster assistance expenditures.

Over 80,000 dams in the United States, representing over 95% of all U.S. dams, are non-federally owned or controlled and their safety is the responsibility of the states. Yet, about half of the states are seriously lacking in their dam safety laws or in their funding and implementation of dam safety inspection programs.

Title XII of PL 99-662 authorizes $13 million per year for 5 years beginning in FY 88 to build state capability to assume dam safety programs. The Act provides for matching funds for state dam safety programs that meet certain standards. We believe that Congress made a wise fiscal decision in this; the cost of dam failures in recent years has been over a billion dollars and two hundred human lives. The safety of non-federal dams should lie with the states, but the federal government is burdened with disaster assistance when dams fail. For this reason, there is a federal interest in building state capability.

We believe the states clearly need, and can effectively use, $13 million per year in building their dam safety inspection and enforcement programs and that these funds should be incorporated in the Corps of Engineers' budget for FY 88. The Corps should also move now to activate the National Dam Safety Review Board established by Title XII.

The needs for training of dam safety inspectors and for research to improve inspection techniques should also be fully funded as provided for in Title XII. The states have consistently expressed the need for this federal training assistance which deserves a high priority.

It would be extremely unfortunate if the Corps of Engineers and the Appropriations Committee did not act now on the opportunity provided by Title XII to help prevent such failures rather than continuing to react after dam failures that are so costly in lives and dollars. The problem continues to get worse as the age of dams in the United States increases. The large number of dams built in the 1960's and before are at an age when significant repairs must now be made which will only happen through an adequate inspection program by qualified engineers.

We recognize that Title XII is a small part of PL 99-662 and in competing for needs it could get lost in your important deliberations. On behalf of the states the citizens and industries below dams, and those who depend upon these resources we urge you to appropriate these funds as provided in the authorization of the Act.

We would be pleased to have the opportunity to discuss this with you and to present additional evidence for testimony.

STATEMENT OF THE HAW RIVER ASSEMBLY

We realize that your hearings record on the FY'88 Energy and Water Appropriations Bill are closed. We were improperly informed of the times of said hearings and would appreciate it if you would circulate our position paper and stance on the Randleman Dam in the 4th. District of North Carolina to the members of your Committee so that they might hear a view contra to those of the various supporters of the project. We have held this position since 1983.

HRA POSITION PAPER ON THE RANDLEMAN DAM PROJECT AND THE MODIFICATION ON THE NEW BUFFALO CREEK WASTE TREATMENT PLANT IN GREENSBORO, N.C.

Our main goal is the upgrading of the Haw River water quality. Another important goal is to create the sense of community in this watershed necessary to upgrade and maintain drinking quality water for the whole river basin. In the recent actions and considerations of the towm of Greensboro, we see lack of consideration of these goals.

Greensboro has requested, and received, from EPA a variance in the South Buffalo Creek Waste Treatment Plant design. The proposed change is the substitution of the approved and costly final solids filtration system with an on-demand polymer flocculation system. First, this alteration would make the new plant no better than the existing plants except for the capacity. Second , the request is a further compromise of already relaxed EPA standards. Third, the polymer system use is based on a threshold level of solids. When solids reach this level(estimated to be 3-5% of the time) the system will be engaged. Fourth, as the waste treatment service area increases in population and in industrial discharge the system will cost more to operate than the present system operating projections admit.

The Randleman Dam Proposal has several shortcomings. First, it uses federal funds viathe Corps of Engineers to support local municipal growth. This tactic is questionable , given the present economic conditions . Second, the water is not needed for twenty years. Consideration of water supply that far in advance is far sighted and admirable, with the exception of shortened projections due to active promotion for industry and population growth. Third, there appears to be an undeclared and unclear rapid growth policy. The Triad(area surrounding Greensboro, Winston-Salem, and High Point) area is an acknowledged growth area without a clear policy, timetable, and land use plan, dangeraous pollution, increased service burden on an insufficient tax rate, ensuing lack of services and then increased tax burden. In short, the typical growth/tax accordian cycle will be instituted by a short sighted group of governors. Fourth, the use of the Deep River water by Greensboro and its discharge into the Haw constitutes an interbasin transfer. This practice will affect the Deep River water quality and reduce downstream use. Fifth, re-cycling is being overlooked. It is the least expensive alternative as well as the

> most sound with regards to water quality. London, England is the prime example of water use,re-use, and zero discharge policy. London's water comes from the Thames River. The water is used and discharged seven times in the length of frontage within the town use area. We encourage that this example be followed by all cities. Sixth, we recommend that before any plan be instituted, the residents of Region G Councils of Governments, source of the Haw, do an inventory of and plan for area waste treatment capacity and needs and water use and resources. We recommend to civic and political leaders of Region G that they consider themselves as protectors of this great resource. We encourage them to pool their resources for a regional, long-term, comprehensive study of growth policy and resource protection.

These points in the above position paper are not the only reasons why Randleman should not be funded, and even abandoned. In the present times when the Congress seems to have lost the will to make painful cuts in expenditures and the deficit passed on to our childern may affect the quality of their lives as well as the safety of the nation, water projects of this nature may be easy ways to balance a budget. Here, within the 4th Congressional District, another Corp lake is becoming a sore point to the people of Chatham Co. It is proving out by statistics collected by the Co Manager, Mr. Marvin Hoffman, that the lake is costing their County $500,000 per year. Increased costs for trash removal, deputies to patrol, extra fire and rescue capacity coupled with the lost tax revenues(supposedly covered by a paultry $29,000 in lieu of taxes) have combined to give one county of the district.more than it bargained for. Now, consider that said county,being poor and prevented by the state until recently from using Jordan's waters due to questionable purity has been unable to use water to help meeet current needs or aid in growth. Consider also that users of the lake leave little income for the county due to their geneally close proxity. It would seem most useful that money to be spent for this project be instead sent to said county to cover the cost of the impact of the lake until such time as the waters of said lake can help the economic well being of the Chatham County. The state, who will manage the recreation of the lake, has been unwilling to give back user fees or aid said county, thus making it imperative that the federal government meet its ethical obligation to cause as little hardship to one area's people when it does something to aid another areas such as downstream flood prevention. As an additional measure, halting the expansion of the high intensity use types of recreation facilities would give Chatham Co. a chance to digest the present glut of visitors. This would free further monies that could be used to alliviate said county's problems.

The areas of the Triad that will use the waters of the Randleman and discharge into the Haw River have not exhibited the political will to clean up their effluents nor the willingness to institute a policy of costs for their water that would allow them to clean up the waste generated. Other counties of the 4th District will suffer from increased growth of the Triad area. Several have applied to drink the Jordan. While the State Environmental Management Commission has allowed the drinking of the water, it has declared the basin a nutrient-sensitive watershed and has indicated that the water bears further scrutiny for systhetic organics and other possible pollutants. Rapid growth in the head waters could make this lingering concern for the health of the Jordan a reality. Should the Randleman be built, Chatham Co. will receive an additional negative impact. All the in-stream flow of the Deep River during dry months would be nothing more than the effluent of High Point's wastewater treatment plant. Goldston/ Gulf draws it's water from this river. The treatment plant of High Point is out of date and has been cited on occassion for exceeding its permitts. This would cause a financial hardship on the people of these town and perhaps even a health risk. In short, our money would be better spent in the district on helping a county that has been economically impacted by the government's actions. It would also have the effect of preventing further negative impact. Halting of the Randleman project would also encourage more co-operation and conservation in the basin. We therefore respectfully request that you cancel Randleman Dam and direct funds that might have been spent through the Corp or other appropriate agency to help one economically impacted area until such time as their problem is solved.

Thank you for your attention to this matter. If you require further information, please call me at (919)966-4576 or 933-6947. We will be happy to appear before your Committee to testify at any time. Please notify our organization of the time of your hearings in the next session in which this matter is before your Committee.

STATEMENT OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

My name is Dale Twachtmann and I am the Secretary of the Florida Department of Environmental Regulation. Today, I am very pleased to present to you Florida's Fiscal Year 1988 Program for Water Resources Development. We strongly support this program, which is a request for appropriations of $61,445,000 for 53 studies and projects. I am submitting, along with my prepared remarks, a booklet containing project descriptions, justifications and costs for the studies and project proposals included in the 1988 program request.

Before I begin my specific remarks about Florida's FY 88 program, I must express our sincere appreciation to the Subcommittee, to the Florida Delegation, and to the Congress as a whole, for what they have appropriated for Florida water resource projects in the past. It has made a big difference to Florida. We depend very heavily on the flood control, navigation, beach erosion control, and other missions of the Army Corps of Engineers.

This has been true for over a hundred years in Florida. Today, Florida has a population of over 11 million people (4.8% of the nation's total). This number is expected to increase dramatically in the next several decades. Our need for wise proper water resource management will also be greater, in order to handle the pressing needs of new residents. However, Florida must plan not only for permanent residents. In addition, Florida plays host to almost 40 million visitors each year. The State's diverse water resources, combined with a warm subtropical climate, are major attractions for both visitors and new residents. This tremendous population growth places heavy pressure on our water resources.

In an effort to protect and conserve these water resources, Florida has been a national leader in water resource management. We are heavily involved in traditional water resource projects, but also have sponsored a series of innovative programs. For example, we have been actively engaged in the large-scale acquisition of floodplains, aquifer recharge areas, and important wetlands. Over the last two decades, Florida has spent three-quarters of a billion dollars for the purchase of two million acres of natural areas. We will spend over a billion dollars more in the next decade. Most of these acquisitions are for wetlands or other areas vital to the State's water resources.

Clearly, strong protection and wise management of our water resources are in both the State's interest and in the national interest. As Florida grows, it is our hope that the Corps will continue its support for urgently needed water resource development plans and projects. Management of stormwater, associated with rapidly increasing urban development, is one area where Corps assistance is critical. Improved stormwater systems for both quantity and quality will be required if Florida's valuable surface and ground water resources are to be protected. The Corps, under the current interpretations of its authority, is restrained from participating in the solution to this problem.

The Federal Government is uniquely qualified to work in partnership with the States to accomplish modern water resource management. The State of Florida encourages full use of some of the innovative provisions of the Water Resources Development Act of 1986. The State of Florida stands ready to work closely with the Federal Government in this endeavor. It is the State's hope that with the higher non-Federal cost share, the local sponsors in conjunction with the State will become more active in the planning and study phases.

Over the last five years, Congress has appropriated about $500 million for Operations & Maintenance, Study, and Construction of civil works projects and studies in Florida. These have yielded tremendous benefits to both Florida and the nation. Congress must be commended for the five million dollar appropriation in FY 87 to begin the implementation of the Cross Florida National Conservation Area. These funds have been held up in the Washington offices of the Corps. We hope that the Subcommittee can find a way to have the Corps release, for the authorized purposes, these funds. We need to get underway the planning and management of this new National Conservation Area. The State, local governments, and private individuals are depending upon Federal action. We will be very appreciative of whatever you can accomplish.

With the passage of the Water Resources Development Act of 1986, some local sponsors will see a higher non-Federal percentage of cost-sharing for studies and projects. Florida has historically made non-Federal contributions which are substantially higher than average to Army Corps of Engineers studies and projects. We hope that higher local cost shares in planning studies will mean greater State and local participation in all aspects of Corps studies, including the selection of alternatives.

Individual Projects

I would now like to discuss some of the highlights in the FY 88 program request. Instead of giving you a lot of facts, figures, and numbers on our proposals, I would like to discuss just a few of the more important and innovative projects and studies proposed for FY 88. Of course, the facts, figures, and numbers are all contained in our program booklet that we are submitting.

Flood Damage Prevention and Water Supply

Under the category of "Flood Damage Prevention and Water Supply", full funding is needed for one of the nation's largest and most complex water management systems: the Central and South Florida project. Recent events underscore the urgent need for State and Federal participation in the management of Lake Okeechobee and the entire south Florida water system. Without wise management, we stand the risk of Lake Okeechobee (one of our country's largest lakes) becoming hypereutrophic. This would be a catastrophe for the millions of people that rely upon it and for the ecosystem that also depends on it, which includes most of the entire southern portion of the State of Florida. The Central & Southern Flood Control Project provides flood and hurricane protection as well as much-needed agricultural water supply. Adequate appropriations for this project are critical to the success of Florida's far-reaching program to restore and protect the Everglades.

Also included in this project are FY 88 funds to continue planning for components such as the Taylor Creek-Nubbins Slough Diversion. This is intended to improve the quality of Lake Okeechobee, while also providing much-needed water for citrus irrigation.

Another major component of the Central and South Florida Project is the Upper St. Johns River Project, a non-structural flood control project pursuant to the provisions of the Water Resources Development Act of 1986, which is now ready for implementation. I would like to point out that we are very pleased with the General Design Memorandum issued last year by the Corps. The project will reduce flood damages and increase water supplies, while enhancing the natural environment. This is one of those Florida projects with a local cost share much higher than usual.

As the local sponsor, the St. Johns River Water Management District is using local property taxes to generate revenues for land purchases. Approximately seventy-five percent (75%) of the $107 million project cost will be assumed by the local sponsor. As a non-structural flood control project, the Secretary of the Army can waive the local sponsor's contribution for construction since the non-federal share exceeds the required twenty-five percent (25%).

Navigation

Ports are important to Florida. We have fourteen deep water ports, which include some of the nation's busiest. Our import and export traffic helps to diversify our State's economy. Our request for FY 88 is for funds for studies of improvements at some of these ports and for actual construction at others. We do believe that port maintenance and improvements can be carried out, in most cases, without causing unacceptable environmental damage. However, this requires good planning, as well as financial commitments for implementation. That need is reflected in our current request. Funds for the Clearwater Spoil Disposal Study, Mill Cove Project, Lower St. Johns River Enhancement Study and Miami River Cleanup Project would be used for these purposes.

Beach Erosion Control

Beaches are, by far, the largest attraction for the 40 million people who visit Florida each year. We have over 775 miles of sandy beaches in Florida. Over 140 miles of those beaches are experiencing critical erosion. The ability of the Corps to help control that erosion is critical to Florida's beaches and to much of our economic base.

Again, the State has also been doing a great deal on its own. We have committed over a quarter billion dollars to purchase many miles of coastline. Additionally, over $30 million dollars has been spent by the State since 1965 on beach restoration projects. Federal assistance plays a critical partnership role in the management of our beaches.

Environmental Restoration and Enhancement

We believe that the Army Corps of Engineers should be able to help in all sorts of water resource problems. One of our major goals is to broaden the scope of Federal participation to include studies and projects that result in the restoration and enhancement of water resources. These projects are important to our State since our economy and quality of life are dependent on maintaining high environmental resource values. Some of these needs are identified in our current request.

The Biscayne Bay Survey Review is authorized and previously funded, yet no funds were included in the President's FY 86 budget. We urge you to accelerate this study.

Funds are also requested for several environmental enhancement studies, including the Lower Hillsborough River Water Quality Enhancement Study. This study will examine means of improving water quality in a stressed urban river.

I would like once again to affirm the State of Florida's commitment to water resources development as outlined in our program booklet. We look forward to working together with the Federal Government to achieve goals beneficial to both the State and the nation. This concludes my remarks. Thank you very much for this opportunity to present the FY 1988 Florida Program of Public Works to you.

STATEMENT OF THE CITIZENS CONCERNED ABOUT THE PROJECT

We were disappointed when Congress increased funding for the CAP last year in the face of the federal deficit. This year the Administration has asked for an even larger increase for this unnecessary project and we ask that you help reduce federal spending by substantially reducing the $270 million request.

Many recent events shore up our continuing contention that the CAP is not needed by Arizona. In early March 1987 Dr. Paul Bracken appeared on Public TV in Phoenix and updated the 1979 Arizona Tomorrow report he coauthored with Herman Kahn. Dr. Bracken noted that Arizonans are now convinced that there is plenty of water to go around. As cited in my 1985 book "How to Create a Water Crisis," that report stated that Arizona could support California's 25 million people without the CAP if agricultural water was converted to municipal use. Agriculture consumes 89% of Arizona's water. It returns only 2% to the State's personal income, according to a 1986 Arizona State University Center for Business Research Study.

Increasingly this word is getting out, hopefully in some measure due to my book, which has been cited in numerous articles. The latest is the April 13, 1987 edition of Insight magazine, portions of which have been attached as part of this testimony. I was particularly impressed by the cover story title "THE MYTH OF SCARCITY" since it reflects the major theme of my book.

The article notes at page 8 that Arizona has been having trouble getting rid of CAP water. In fact, only 70% has been contracted for. However, it notes that water will be delivered to Tucson by 1991. The upfront funding contract between Arizona and Interior schedules the aqueduct's completion in 1995. I would also point out that this same contract only slates $221.1 million for the CAP in 1988.

[The Washington Times, April 13, 1987]

WESTERN GROWTH AT A WATERSHED

SUMMARY: In the Western United States, water is in scarce supply. That point is inarguable. What is in question, however, is whether the shortage is due to waste, mismanagement of resources, the planting of high water-use crops in the desert, or a combination of all these factors and more. As water becomes increasingly more expensive to obtain, the exodus to the Sunbelt may subside. And to the moist states will go the spoils of the dry ones, as water is transported interstate. Removing salt from Pacific water may be the final solution.

The Sonoran Desert, western Arizona, March 3: Driving west from Phoenix one quickly enters some of the most inhospitable — and parched — country in the United States. Annual rainfall, no more than 4 inches. Average temperature in July, about 109 degrees.

Endless buff-colored basins, dotted with scrub mesquite trees and saguaro cacti, stretch away to the horizon. Above them loom the first stony outcrops of the Buckskin Mountains, dark escarpments rising above the desert floor like the humps of great sea beasts moving across an ocean of rock and sand. The next big town is Blythe, across the Colorado River. A native from one of the earlier desert cultures that inhabited Arizona — the Hohokam, for instance, who disappeared around six centuries ago — would find little changed in the monotonous landscape.

Unless, that is, he headed a few miles north, where he'd stumble on a man-made river through the desert: the Granite Reef Aqueduct, the initial section of the Central Arizona Project.

The aborigine, whose people were master canal builders, would immediately recognize the aqueduct as a spectacular feat of engineering: a fenced-off, concrete-lined, gravity-defying ditch, 335 miles long, conveying Colorado River water from Lake Havasu to the burgeoning Phoenix-Tucson basin. When complete, the project's initial plants will pump 3,000 cubic feet, or 22,500 gallons, of water per second. Traveling through 14 pumping plants, the water will be lifted 2,900 feet — more than twice the height of the Empire State Building — by the time it reaches Tucson.

Conceived as far back as the first decade of the century, approved by the Arizona Legislature in 1944, authorized by Washington in 1968 and officially undertaken in 1973, the Central Arizona Project made its first deliveries to Phoenix in 1985. The final segment of the aqueduct, moving water south to Tucson, is scheduled for completion in 1991. By that time the cost of the CAP, as the project is known to everyone in Arizona, will have climbed to at least $3.5 billion. For most of this century it has been billed by its supporters as critical to Arizona's livelihood, a heroic effort to ensure the future water supply of the desert Southwest and the key to Arizona's future growth.

"Arizona couldn't survive without it," intones Andy Kurtz, executive secretary of the Arizona Farm Bureau Federation.

The only problem is, some economists and water resource authorities in Arizona contend that CAP water is superfluous. And so far the authorities in charge of selling and distributing the water have had trouble getting rid of it.

Water and its perceived scarcity have formed one of the central myths of the West ever since Brigham Young's hardy troop of Mormons began digging crude irrigation channels in the Great Salt Lake Valley in 1847. Much of the history of the West, in fact, has consisted of struggles over water: the effort to build Hoover Dam (called at the time "a raid on the national treasury" by the Chicago Tribune), the plundering of Owens River Valley's water supply by Los Angeles (immortalized in the film "Chinatown"), the fight over Colorado River water that continues to this day. Water was scarce.

and whoever could grab, and hold, and use the most controlled the future.

Western politicians, particularly Arizonans, have made careers out of tirelessly supporting the building of massive, expensive, federally funded water projects.

acre-foot, the amount required to cover an acre of land to a depth of 1 foot, is about 325,851 gallons. Arizona was losing more groundwater than the total annual use from all sources in all but 15 states that use the most water. In outlying areas of Phoenix large sinkholes had begun to appear as the water table dropped and the land subsided.

The CAP forms a cornerstone of the Groundwater Act, but some experts dispute the idea that its water is essential to the state's survival.

A 1979 study by the Hudson Institute, "Arizona Tomorrow," stated that "if all agricultural water was reallocated to municipal uses in 1970, the state could have supported a population of over 25 million people. Moreover, this scenario does not incorporate the development of new water supplies from the Central Arizona Project or others coming on line after 1970."

The key phrase in that statement is "all agricultural water." As in the West generally, agriculture consumes 85 percent to 90 percent of all water used in Arizona. The cities, say critics of the water project, are not running out of water; the farmers are wasting it.

Statistics produced by the College of Business at Arizona State University show that agriculture, which dominated Arizona's economy in the early 1950s, contributed only 2.3 percent of the state's personal income by the 1980s. The traditional four C's of Arizona's economy — cotton, climate, cattle and citrus — lost ground to new industry as the exodus to the Sunbelt gathered steam and the cities grew. That figure is disputed by Arizona Farm Bureau officials who point out that it ignores sectors of the economy directly dependent on farmers: manufacturers of equipment, installers of irrigation systems, automobile dealers in rural towns. But the conclusion that agriculture's importance has been steadily reduced is inescapable.

"Agriculture in Arizona is a dead industry," shouts a pamphlet from the Citizens Concerned About the Project, "but subsidy checks from Washington keep it alive. Eliminate the subsidies and Arizona could begin to solve her water problems."

Carolina Butler, a dark, flustered woman who lives in a sprawling house fronted with a citrus grove in northern Scottsdale, is fond of calling herself "just a housewife." However, she has turned her opposition to the water project, and to the continued domination of the state's water supplies by farmers, into something of a crusade.

"We have a gigantic scam going here," she claims in a room of her house that has been turned into a library on Arizona's water disputes. "It's to the advantage of the water interests in Arizona to keep up this myth that we have a water shortage, to keep the federal funds coming in for the Central Arizona Project. . . . A few billion dollars is nothing to sneeze at." She adds, "How can you look me in the face and tell me we have a water crisis? It's laughable."

To most water administrators, the housewife's views are simplistic: Agriculture remains an economic staple as well as a political force in Arizona, and no amount of complaining from citizens groups is going to hasten the reallocation of increasingly expensive water.

STATEMENT OF THE IZAAK WALTON LEAGUE OF AMERICA

The Izaak Walton League of America is a national non-profit membership organization committed to the conservation and wise use of this nation's natural resources. The League has over 46,000 members nationwide in 376 chapters and 20 state divisions. Over 14,000 of these members live in the States of the Upper Mississippi River Basin: Illinois, Iowa, Minnesota, Missouri and Wisconsin.

The members of the Izaak Walton League of America support a funding level of $10 million for the implementation of the Upper Mississippi River System Environmental Management Program (EMP) in the FY 88 Energy and Water Appropriations. The Environmental Management Program was authorized as a major component of the "Upper Mississippi River Management Act of 1986" (Section 1103, P.L. 99-662) with an authorization of $16.72 billion for FY 88 and a total authorization of $191.45 million through FY 97. The other major component authorized by that legislation is the construction of a second lock at Lock and Dam 26 (replacement), with a total authorization of $220 million. While we would prefer that the EMP be fully funded at $16.72 million for FY 88, we view the $10 million request as the minimum that should be appropriated if the EMP is to meet its objectives over the ten year life span of the program. Our recommendation is considerably higher than the administration request of $4.1 million in the proposed Army Corps of Engineers Budget.

Background

The Upper Mississippi River supports substantial yet finite and threatened fish and wildlife resources and their associated habitats. The U.S. Fish and Wildlife Service's Fish and Wildlife Coordination Act report for Lock and Dam (Replacement) Second Lock describes the living resources of the Upper Mississippi:

> The heavily forested floodplain and islands and diverse aquatic areas of the UMRS provide valuable fish and wildlife habitat for the benefit of the region and the nation. The Upper Mississippi River mainstem is

> the focal point for one of four major migration routes, or flyways, for millions of North American birds (over 300 species). In addition, ten federally listed threatened or endangered animal or plant species are found along the UMRS, as well as over 90 species that are listed by the bordering states as threatened, endangered or of special concern. The UMRS waters are home to over 150 species of fish and 50 species of freshwater mussels. The river corridors also provide habitat for many mammals, reptiles, and amphibians. The Service manages over 80,000 acres of land and 150,000 acres of water on five UMRS National Wildlife Refuges, for the benefit of fish and wildlife on both the mainstem and tributaries. Additional lands and waters are managed by the state conservation agencies. Finally, the UMRS is an important national recreation and commercial fish and wildlife resource. Economic benefits generated by this resource may total well over $1 billion annually, of which approximately 37% is due to sportfishing, 61% pleasure boating and nonconsumptive recreation, 1% waterfowl hunting, and 1% commercial fishing and trapping.

Since its founding in 1922 the Izaak Walton League has made the protection of the living resources of the Upper Mississippi a key priority. In 1923 it was the Izaak Walton League that convinced President Calvin Coolidge and Congress of the importance of these resources. That effort resulted in the enactment of legislation creating the Upper Mississippi Wildlife and Fish Refuge, the first refuge for which Congress authorized the acquisition of land. The League has long been concerned with impacts upon the natural resources of the UMRS resulting from mans activities, including those associated with commercial navigation and agriculture.

It is this concern that led the League to work to protect these living resources from such impacts in both the courts and Congress. Out of these efforts in recent years has come legislation mandating the development of a Comprehensive Master Plan for the Management of the Upper Mississippi River System by The Upper Mississippi River Basin Commission, now the Upper Mississippi River Basin Association (P.L. 95-502). Section 1103 of P.L. 99-662 approved this plan and authorized two of its principal components, the second lock and L&D 26 and the EMP.

Basis for Recommedation

While the IWLA continues to oppose the construction of the second lock at Lock and Dam 26, because it is unnecessary and would cause further degradation of the systems natural resources, and for that reason does not approve the master plan, we do strongly support implementation of the EMP. The environmental program if fully implemented, will provide much needed additional information regarding the status of the Basin's natural resources through the Long Term Resource Monitoring Program. Also, the construction of the habitat rehabilition and enhancement projects will begin to mitigate damage to the living resources of the system resulting from decades of commercial navigation and sedimentation. The importance of this component of the program was pointed out by the Environmental Report accompanying the Master Plan. That report concluded that even if the navigation traffic does not increase, as it will with the construction of the second lock at L&D 26, most of the rivers productive backwater areas will be lost over the next fifty years due to sedimentation resulting from current traffic levels. Many of the proposed rehabilitation and enhancement measures are designed to prevent or slow this process. In addition the LTRM and the habitat and enhancement program are interlinked in that the monitoring program will track the success of rehabilitation and enhancement projects to ensure they are as effective as possible. This aspect will be especially important when the second lock goes into operation.

Aside from the importance of the EMP program to the continued survival of the Basin's living resources, it is also important that the EMP be fully implemented in order that the River be managed in accordance with the intent of Congress. In enacting P.L. 99-662 the 99th Congress was very clear in stating that the living resources of the river be protected, that recreational opportunities be preserved as well as the second lock constructed. In enacting Section 1103 of PL 99-662 the 99th Congress recognized the importance of the natural resources of the river to the nation. Section. 1103(a)(2) states:

> To ensure the coordinated development and enhancement of the Upper Mississippi River System, it is hereby declared to be the intent of Congress to recognize that system as a nationally significant ecosystem and nationally significant commercial navigation system. Congress further recognizes that the system provides a diversity of opportunities and experiences. The system shall be administered and regulated in recognition of several purposes.

5

In order to fulfill that mandate Congress must fund the EMP at or close to its authorized level over its ten year life span. The appropriation of $10 million for FY 88 would be a significant step in that direction, allowing the program to make substantial progress toward being able to fully utilize its authorizations in the following years. It is also imperative that the program receive our recommended level of funding because there is no provision for unappropriated funding to be carried forward in future years. Without at least $10 million in funding for FY 88 the EMP will be significantly delayed in its implementation at the precise time when it needs to be making significant progress in anticipation of completion of the second lock at L&D 26.

It is important to note that although the requested appropriation for the second lock for FY 88 is only $4 million, appropriations will increase dramatically over the four year construction period. The anticipated requests from the administration are $24 million for FY 89, $86 million for FY 90 and $92.6 million in FY 91. The authorization for the EMP is logically more consistent from year to year over its ten year duration with authorizations of $18.56 million for FY 89, $19.95 million for FY 90 and $19.46 million for FY 91 through FY 97. In order to maintain the mandated and critical balanced approach to the management of the River the EMP must be funded at or near its authorized level in the face of the anticipated appropriations for the construction of the second lock. Therefore we feel that it is necessary and appropriate that the EMP receive an appropriation of $10 million in FY 88.

In addition to the construction of habitat rehabilitation and enhancement projects and the implementation of the Long Term Resource Monitoring Program the League fully supports the other components on the EMP: the construction of recreation projects, the recreation economics study and the monitoring of navigation traffic.

We feel the recreation components of the EMP are essential to the mandated balanced management of the system and support their funding and implementation. We agree with the position of the Upper Mississippi Basin Association regarding the need for their funding as well as the Association's view that the administration's policy of not pursuing any recreation projects is inconsistent with multiple purpose management of the system mandated by Congress. We also urge that the Energy and Water subcommittees include the language recommended by the Association, directing the Secretary of the Army to pursue the recreation components of the EMP, in the appropriations legislation.

We also feel that is important that navigation traffic monitoring program be fully funded and implemented to assure that any efforts undertaken to expand the navigation capacity of the system be fully and accurately justified.

Conclusion:

Because of the Izaak Walton League's long standing commitment to the protection of the fish and wildlife resources of the Upper Mississippi River System and our commitment to the enhancement of the recreational potential of the System, the League recommends that the subcommittee appropriate $10 million for the iProgram. This recommendation is substantially greater than the administration request of $4.1 million, but far less than the $16.72 million authorized by P.L. 99-662. We feel that the administration request does not fulfill the mandate of Congress that the System be managed to preserve its status as anationally significant ecosystem as well as a nationally significant navigation system. And although our recommendation is less than the authorized level we would ideally like to see appropriated the League believes that $10 million in FY 88 will allow the program to make significant progress toward implementation and will enable it to effectively utilize its full authorization in future years.

STATEMENT OF THE MISSISSIPPI WILDLIFE FEDERATION

The Mississippi Wildlife Federation appreciates the opportunity to submit testimony and to comment on two important water resources projects in Mississippi, the Yazoo Backwater Pump Project and the Tennessee-Tombigbee Waterway.

Yazoo Backwater Pump Project

The Mississippi Wildlife Federation continues to oppose the construction of the Yazoo Backwater Pump Project. Our opposition was detailed in our statement submitted to your Committee last year, and our position has not changed. We remain unalterably opposed to a project we see as environmentally damaging and economically unfeasible. In addition, we would address three specific concerns in reference to the project.

First, we oppose granting a waver for the Yazoo Backwater Pump Project from the cost-sharing provisions of the 1986 Water Resources Development Act. The project is designed primarily to provide agricultural intensification benefits to local landowners, with some benefits accruing from reduced local residential flooding. Put simply, the project provides local benefits and should be locally cost-shared. We are convinced that, by increasing the local financial responsibility for this and all Corps projects, the environmental damages resulting from unneeded or oversized projects can be greatly reduced.

Secondly, the Mississippi Wildlife Federation and the National Wildlife Federation have developed a viable alternative to the Yazoo Backwater Pump Project which will provide local interests with reduced flood damages at substantially less expense than the Corps-proposed project. This alternative was provided to the Corps and the Congressional delegation last year for their study. Should cost-sharing be secured, this alternative should receive the thorough consideration of the Corps. The Federation reiterates its desire to work together with all interested parties to secure approval for our alternative proposal in the best interest of our national and state economies and our irreplaceable natural resources.

Thirdly, we request that no further funding be obligated by the Corps for continued construction at the project site and that no further funds be appropriated by Congress for the project until a new consensus has been developed within the state concerning the best possible solution to the problems of the lower part of the Mississippi Delta. Until the issue of cost-sharing has been resolved and all viable alternatives have been studied, to continue work at the project site is not only a waste of taxpayers' money, but continues to unnecessarily degrade the local environment.

In addition to these concerns, we would also like to recommend that mitigation for the backwater levee, as authorized in the 1986 Water Resources Development Act, be funded. Not only is this a good time to acquire land for mitigation because of low land values, but because farmers in the area would welcome a needed infusion of cash to offset low market prices for commodities.

Tennessee-Tombigbee Mitigation

The Mississippi Wildlife Federation strongly recommends that the wildlife mitigation promised for the Tenn-Tom Project, which slashes through the northeast corner of Mississippi, begin immediately, in accordance with the language of the 1986 Water Resources Development Act, which authorizes the acquisition of 88,000 acres at a cost of $60.2 million. Referring to our comments regarding mitigation for the backwater levee in the preceding paragraph, we contend that, given the current agricultural conditions in Mississippi and resultant land values, it is particularly important to expedite appropriations to fund this acquisition from willing sellers.

[From the Clarion-Ledger, Wednesday, October 22, 1986]

WATER PROJECTS

The change in federal policy requiring state and local governments to pay a substantial part of the cost of water projects may delay or stop construction of the Yazoo Backwater Pumps project in the lower Mississippi Delta. If this happens, the taxpayers will benefit, so will the Delta and so will the public at large.

Originally authorized in 1941, the project today goes against logic, and the claims of its supporters are highly questionable.

The pumps are designed to lift flood water from the protected lands and to discharge it onto the unprotected floodlands on the levee's river side.

U.S. farm policy and tight federal, state and local budgets both dictate against continuation of the $100 million pumping project.

Agricultural policy, in a period of overproduction, is being directed toward taking land out of cultivation. Yet the backwater pumping project is aimed at reducing flooding on about 200 square miles of flood-prone, sparsely settled south Delta.

Further, federal, state and local government budgets are under great strain, and many more pressing needs must be met before optional — and especially dubious — projects and services can be considered.

The flow of tax money would not stop with completion of the Yazoo Backwater Pumps. If state and local governments did fork over for construction $25 million — or 25 percent of the cost under the new water projects policy — there would be the matter of providing $1 million annually for operating costs.

The area to benefit contains only an estimated 1,000 families and a relatively few large landowners. And even then the expectation is for only a 50 percent reduction in flooding.

There are other strikes against it. The Mississippi Wildlife Federation is strongly opposed on environmental and economic grounds. The federation has proposed an alternate plan that relies on flood-proofing of homes and buying flood easements, at a cost of $35 million.

Further, do Mississippians want to threaten the last large wetlands in the Delta? Opponents also argue that the project would result in the clearing of the last large tract of bottomland hardwoods in the area.

Finally, there is doubt that the project can substantially alter conditions that have prevailed over the history of the lower part of the area, a natural swamp that has served as a sump for the Delta's low-lying alluvial plain.

Nevertheless, the U.S. Army Corps of Engineers is forging ahead, clearing woodlands, excavating canals and building earthworks. The corps has placed the project on "fast-track status," which makes one wonder if this haste could support a subsequent argument that too much money has been spent to abandon it.

Altogether, the cost is too great for even the most generously estimated benefits. The plan has been put on the shelf before, and it should be thereto permanently reassigned.

STATEMENT OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

The Associated General Contractors of America represents more than 32,500 firms including 8,400 of America's leading construction companies. These general contractors employ more than 4,000,000 workers, and perform more than 80% of America's contract construction of commercial buildings, highways, industrial and municipal-utilities facilities.

The Water Resources Development Act of 1986 was the first omnibus water resources authorization bill enacted in seventeen years. The Act contains maximum limits on appropriations over the next five years for the Civil Works Program of the U.S. Army Corps of Engineers. AGC encourages Congress to provide appropriations to the fullest limit permitted by the Act in order to begin addressing the nation's water resources infrastructure needs. The construction program of the Bureau of Reclamation must also be provided with funding in excess of previous years to complete ongoing projects, in order to realize their benefits at an early date.

Federal Leadership is Still Needed

Federal water programs have enhanced entire multi-state regions by providing flood protection, water transportation and recreational opportunities. Historically, irrigation and hydropower projects have stimulated the regional economies, by providing incentives for business and agricultural capital investment.

National security is another crucial, though infrequently-mentioned, aspect of the nation's water resources. Navigable channels, electricity for production and adequate supplies of water are as important to the country's defense as the nation's defense (interstate) highway system.

In the early 1800's, this nation's forward-thinking leadership recognized the necessity for taming uncontrolled river basins, which periodically threatened life and property, into useful and productive systems essential to manufacturing activity and economic growth. The nation has benefited. So have the states. The system has worked because federal leadership and coordination have made it work.

Special Problems Around the Country

UPPER NORTHWEST -

Along the Columbia Basin and in the Puget Sound this region is confronted with the problem of extremes. Flooding is a continuing problem during the heavy storms, particularly along the coast. Away from the coast, the region is extremely arid and storage of large quantities of water is required for both irrigation and municipal and industrial purposes. Additional storage is desirable.

Navigation is important to this region as well. The Columbia River, in addition to providing hydroelectric, flood control and irrigation benefits to the region, also is an important transportation artery. Improvements, in addition to maintenance, must constantly be made to the Columbia's channel in order to keep it a viable transportation route.

SOUTHWEST -

Arid Southern California has the greatest concentration of water supply structures in the nation. The Southwest region has allocated more water from the Colorado River than normally flows down its valley, and its swiftly growing cities (Las Vegas, Phoenix, Los Angeles) in the basin are constantly competing for the supply that it has to offer. More water supplies are needed, however. Additional impoundment reservoirs which could capture Spring season runoffs would greatly relieve the region's water quantity problems. Two highly beneficial water programs in the Southwest which deserve continued support by Congress are the Central Arizona Project and Central Utah Project. These great engineering projects guarantee a balanced supply of quality water to the semi-arid lands that are in critical need of this resource.

GREAT PLAINS -

The Ogallala aquifer, the nation's largest underground reservoir, underlies an area stretching from New Mexico through South Dakota. In its Northern region, the aquifer contains vast amounts of water, but in Oklahoma and Kansas, water levels have been drawn down to critically low levels forcing farmers to abandon pumped irrigation systems. In this region, small reclamation dams could provide water for efficient drip irrigation, leaving the drinkable groundwater for personal consumption.

In the Upper Midwest, the Garrison Diversion Project will supply water for 250,000 acres of presently semi-productive farmland. Fresh water from the impoundment will freshen and stabilize many of North Dakota's lakes and wetlands, some of which become salinized or dry during frequent droughts. Midwestern taxpayers deserve continued federal support for this multi-purpose water system.

MISSISSIPPI VALLEY -

This heartland valley is a conduit for more water than any other river basin in the United States. The Mississippi River has problems with navigation, flooding and water quality, primarily due to sedimentation and lack of funding for construction and maintenance on levees and locks. Nine thousand miles of commercial waterways (at least 9 feet deep) are found on the Mississippi and its tributaries. This amount of mileage represents fully one third of the nation's total domestic system of 25,000 navigable miles. The instream flow required depends on man-made structures for its volume, including but not limited to bank protection, channelling, the number of barge locks, and dam controlled runoff. The nation's commitment to the investment it has already made and its commitment to the taxpayers in the Mississippi Valley for addressing its water issues must be maintained.

SOUTHEAST -

Flooding affects humid as well as arid areas of the U.S. Half of all flood damage is suffered by agricultural interests as livestock is destroyed and productive crop land washed away or covered up. The unconsolidated soils of the Southeastern coastal plain are especially susceptible to erosion. The federal government can better manage flooding through a combination of structural measures, such as flood channels, dams and spillways, and better communication, such as accurate forecasting and evacuation procedures.

NORTHEAST -

A regional priority is upgrading of seaports. The cities of Philadelphia, Baltimore and Norfolk in particular have stressed their interest in harbor deepening to 55 feet for handling 'super-colliers.' The Water Resources Development Act of 1986 has addressed the needs of several of the seaports in the Northeast. These seaports also have demonstrated their commitment for port improvement by agreeing to cost-sharing arrangements with the federal government. Adequate appropriations should be made to bolster the local commitment made by these ports.

Publicly-Owned Water Deserves a Balanced Federal Approach

Water development in the 1980's has been weighed down by permit processing and regulatory paperwork. With growing (and sometimes ill-informed) environmental pressures, there has evolved a bewildering maze of cross-purposes among the various agencies of government. The Water Resources Development Act of 1986 has taken a step toward alleviating some of the regulatory paperwork related to the development of water resources projects. The Act has also resolved some of the areas that have created conflicts between water resources agencies. Passage of the Act requires adequate funding in order to implement its provisions.

Passage of appropriations, at least at levels as those in the proposed 1988 budget, is another step in providing adequate water resources funding for the balance of the century. Further sustenance of the nation's economic renewal is predicated on the nation's water resources infrastructure. Traditional water use and flood control projects, developed cooperatively by local, state and federal groups, are proven catalysts for national growth and expansion by providing nearly 60,000 jobs for every $1 billion in expenditure.

The Associated General Contractors of America urges Congress to continue to exert its leadership in water resources development. The nation can ill-afford any further federal deferral of needed maintenance or replacement of the nation's waterway structures.

America's infrastructure needs have been carefully documented by AGC and other organizations. Prompt attention to these needs will encourage a more reasonable balance between the twin objectives of stabilization of natural resources and stimulation of economic growth. AGC encourages Congress to make this commitment through a well funded program for this nation's water resources structures.

Letter From Annetta Watson, Coordinator, Valley Environmental Network

Route 3, Box 505D
Harriman, Tennessee 37748
April 3, 1987

Senator J. Bennett Johnston, Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Chairman Johnston:

Please include the enclosed statement in the record for the TVA non-power budget appropriations hearings. Professional commitments do not permit me to attend the hearings scheduled for March 30-April 2 in person.

I am presenting the statement on behalf of the Valley Environmental Network (VEN). Our concern is that the TVA Board and general management do not seriously consider concerns expressed by the environmental community of the Valley in planning the agency's resource allocations. As a member of the environmental community who has spent much time and effort in presenting issues and their resolution to the Board in a reasonable way and then being ignored or rebuffed, I request that any TVA appropriations your Subcommittee recommends include:

1. Strong provisions requiring TVA accountability. Reporting mechanisms for actual expenditures are a given. There is additional need for specific goals, milestones and ongoing appraisal of whether progress is being made toward solving regional problems.

2. Congressional and local oversight of TVA activities. As an agency, TVA often makes decision without consideration of input from the communities its decisions will directly affect. It also ignores problems of its own making despite well-reasoned warnings from its own staff and the loyal opposition. There are no good reasons for continuing this form of decision making.

Because the agency insists on passing over good advice from community representatives and its own staff, It will be necessary for the Congressional appropriations process to provide guidance necessary to meet the region's needs.

Thank you for the opportunity to present testimony.

Sincerely,

Annetta Watson

Annetta Watson, Coordinator
Valley Environmental Network

STATEMENT OF THE VALLEY ENVIRONMENTAL NETWORK

My name is Annetta Watson; I represent the Valley Environmental Network (VEN), a loose coalition of environmental groups from the seven-state Tennessee Valley Region. The Network's principal goals are to identify TVA-related environmental issues of general concern, present them to the TVA Board and management staff and advocate solutions that can be implemented by the agency. The chief mechanism for fulfilling these goals has been that of helping organize the Valley Environmental Constituency Meeting annually sponsored by TVA to ostensibly gather input from the regional environmental community.

For the past two years, the VEN has produced position papers serving as the basis for workshop discussions held at the Constituency meetings. Workshop groups reached consensus in recommending specific actions toward solving problems of abandoned mine lands, solid waste, hazardous waste, toxic air pollutants, energy conservation and river system management in the Valley. The papers and recommendations were presented directly to the Board. Despite the Board's professed interest and considerable effort expended on our part, substantive action resulted in only one of these areas--abandoned mine lands (AML). In early 1986, cooperative action by the Environmental Quality Staff and members of the Division of Land and Economic Resources (TVA), environmental groups and Senator James Sasser led to allocation of $2 million from the Department of Interior for AML sites in Tennessee.

Recommendations arising from the 1986 Environmental Constituency Meeting were presented in person to Chairman Dean and Board Member John Waters on September 22 and formalized by letter on November 20 (see accompanying exhibit). Today, over four months later, the VEN has received no response from the Board. And this, despite the fact that the river system management topic was of so much concern that the workshop was attended by a standing-room-only crowd of community leaders from six states.

The presence of a substantial population of interested and informed citizens willing to contribute to solving major problems confronting the agency represents a resource that should not be ignored by TVA. The fact that agency decision makers consistently fail to acknowledge this resource and steadfastly refuse to interact with the environmental community in a reasonable and substantive way is an indictment of the agency's reactionary management policy. TVA is losing a tremendous opportunity to benefit from the talent offered by these citizens and, in so doing, demonstrate community involvement and obtain community support.

There are individuals and branches within TVA that also recognize the significance of the Region's environmental problems and are doing what they can to solve them. But the attitude to environmental issues displayed by the agency's management structure extends to a cavalier treatment of its own staff recommendations. Seven years ago, a TVA survey report stated that ". . . TVA has contributed to the problem of low dissolved oxygen in the Tennessee River, because TVA's dams withdraw water from the lower levels of reservoirs . . . ." ("Is the Water Getting Cleaner?" TVA Office of Natural Resaources, 1980). In April 1987, low dissolved oxygen is still a problem.

We request that recommendations of the Subcommittee on Energy and Water Development re TVA's non-power budget guide TVA's attention to treatment and resolution of environmental problems in the Valley. There is general consensus among representatives of environmental groups that river system management is of great regional significance and that TVA has a major responsibility (through its power, flood control and navigation programs) for maintaining and improving Valley water quality. Other worthy issues identified by the environmental community are:

- energy conservation
- hazardous waste
- solid waste

- toxic air pollutants
- abandoned mine lands (AML)

Some of the issues are interrelated (e.g., AML and sedimentation of area surface waters).

We further request that mechanisms requiring TVA accountability for environmental problem resolution be built into TVA's appropriated budget. These mechanisms should include provisions for Congressional and local oversight.

Thank you for the opportunity to present testimony.

LETTER FROM MRS. CAROLINA BUTLER, SCOTTSDALE, ARIZ.

February 21, 1987

Sen. J. Bennett Johnston, Chairman
Subcommittee on Energy and Water
U.S. SENATE Appropriations Committee
Washington, D.C. 20510

Gentlemen:

I wish to submit this letter and the text of the enclosed letter in opposition to funding for the unfinished Central Arizona Project.

Be assured there is enough water in Arizona for people. The problem is 89% is being used for agriculture, much of it for heavily subsidized surplus crops. Arizona's water director has said that without agriculture Arizona could support a population of over 20 million. Arizona today has 3 million.

The USDA Feb. 1984 study, "Production of Surplus Crops on Irrigated Land Served by the U.S. Bureau of Reclamation," which found that a full 45 per cent of lands throughout the West irrigated with subsidized BuRec water were planted with surplus crops is reason enough to stop this wasteful spending on this unfinished BuRec project.

Please include this letter and the attached text as part of your official record. Thank you.

Sincerely,

Carolina Butler

Mrs. Carolina Butler
11837 N. Paradise Drive
Scottsdale, AZ 85254
(602) 948-6824

Letters to the Editor
THE WALL STREET JOURNAL
200 Liberty Street
New York, N.Y. 10281

Dear Editor:

Fifty years ago, in a hilarious (if you're not a farmer) article, H. L. Mencken wrote that the only solution to the never-ending support of farmers at the taxpayer's expense was to sterilize them. He wrote in this 1936 article that, "No evidence was adduced... that this succoring had ever done its target any good... "

"How long will this nonsense go on?" he asked. "It will go on so long as it is profitable for political mountebanks to keep it going - so long, that is, as they can hang on to their jobs by robbing the industrious and thrifty to support hordes of the indolent and incompetent... So long as political racketeers can hold their places at the trough by promising to secure A against the need of work by looting B who works, just so long will the politics of the country hold to its present fraudulent level."

Today, I would suggest instead sterilization of journalists since H. L. Mencken who continue to give us the picture of farmers "regarded with a peculiar tenderness and the theory is maintained that they must and shall be kept at ease out of the pockets of the rest of us." The nonsense goes on because, like James Krohe Jr, associate editor of the ILLINOIS TIMES wrote in the WSJ 5-23-85, "what most Americans know of farming they must learn at the knees of newspaper editors." I agree. You are the ones mostly at fault.

I suffered again this morning through still another farm story on the front page of this morning's WSJ containing the usual passages like "And the family farm still has a powerful hold on the American consciousness," and, "So far, Congress has supported that ideal - to the tune of $25 billion." Once again, I asked myself, "When are those reporters and editors going to go beyond the Midwest?" There is more to the picture.

All the while you dwell in the same spot, Washington is spending our money on the farm crisis and the concomitant water crisis. Both crises, of course, are "created" by the above mentioned political racketeers. The nonsense has grown since Mencken asked in 1936 how long it will go on.

A short explanation of what you don't cover: Here in Arizona, agriculture is a dead industry but subsidy checks from Washington keep it alive. Arizona agriculture uses 89% of the state's water but contributes only 2% to Arizona's personal income. A poor investment of water you must admit. Our major crop is cotton, heavily subsidized, a surplus crop; so mechanized it employs few people; is a big user of water, energy, chemicals and taxpayers' money. Yeah, we can make the desert bloom. The cost is high and is not worth it but the nonsense goes on.

Even as our national debt is over $2 trillion and the annual deficit spending over $200 billion, Pres. Reagan's fiscal 1988 budget proposes $275.8 million, a record increase of almost $70 million, for the Bureau of Reclamation's unfinished Central Arizona Project. The Bureau of Reclamation is in the crop-growing business in the seventeen Western states but it is not under the U.S. Dept. of Agriculture. The Bureau of Reclamation is under Interior Secretary Donald Hodel. Reclamation's multi-billion-dollar Central Arizona Project will provide taxpayer-subsidized water so Arizona farmers can continue growing taxpayer-subsidized cotton, a surplus crop. Cotton, of course, grows in the Deep South with rain - without expensive water projects.

To sum up: At the taxpayer's expense, spending on crop subsidies encourages more cultivation which creates a surplus and a farm crisis and spending on surplus crop subsidies creates a water crisis which creates a need for Reclamation projects which bring more land into cultivation which creates a need for more spending to subsidize more crops. I left out the need for more spending to store surplus crops and other costly details but you get the picture.

To continue. In sad farm story after sad farm story, and this morning again, the WSJ has told us about the "plunging land values." Untold is the frenzied land speculation going on in Arizona. Untold is that Reclamation's taxpayer-subsidized Central Arizona Project is really a real estate scheme for Arizona farmers. It is a double-cropper! After being supported by taxpayers while farming, farmers are selling to developers for huge profits, thanks to Reclamation. Thanks to Pres. Reagan. Thanks to the farm crisis. Thanks to the water crisis. Thanks to the WSJ which doesn't report any of this. The same scam is going on in other Western states.

Please don't write anymore like in your farm story this morning that "Congress has supported that ideal - the family farm." In 1982, I along with many other individuals and organizations lost the fight to save the family farm in the seventeen Western states. When Congress changed the acreage limitation from 160 acres to 960 acres, of the old Reclamation Act of 1902, Congress demonstrated support for industrial farms. Where were you and Willie Nelson then? At a Bureau of Reclamation hearing I attended just over a month ago, Arizona farmers were there demanding that foreigners be made eligible to receive taxpayer-subsidized Reclamation water for their farm holdings which are growing surplus subsidized crops. "Save the family farm" is a bunch of bull.

The Reclamation Reform Act of 1982 did produce a study which says it all. The February 1984 study by the USDA Economic Research Service, "Production of Surplus Crops on Irrigated Land Served by the U.S. Bureau of Reclamation," found that a full 45 per cent of lands throughout the West irrigated with subsidized Bureau water were planted with surplus crops - 59 per cent in California. This proves there's gobs of water in the West and there's no need for Pres. Reagan's budget-busting spending on Reclamation projects. Eliminating surplus crop subsidies would save money and water.

Charging Reclamation farms full cost for government water is the least that should be done. This area of phony farm and water crises should be the easiest place to cut the budget. I left out the gobs of subsidized hydropower we would also save.

H. L. Mencken is not the only one I admire. This was all explained in the 1982 Pulitzer Prize winning series of articles on our nation's water by reporter Rick Atkinson in THE KANSAS CITY TIMES. Maybe you missed them. In his series entitled, "The Next American Crisis," he wrote how the chaotic management of water bleeds the national treasury and pits the Midwestern farmer against Western farmers. He got the whole picture.

If you missed the award-winning articles, I direct you to the January 1987 issue of READER'S DIGEST and its article, "Why Farm Subsidies Have Come a Cropper." Farm subsidies and water subsidies go together. The article makes the connection. Won't you?

Fifty years ago H. L. Mencken asked, "How long will this nonsense go on?" It will go on until reporters and editors present the story better.

LETTER FROM ANNETTA WATSON, COORDINATOR, VALLEY ENVIRONMENTAL NETWORK

C.H. Dean, Jr.
Chairman, Board of Directors
Tennessee Valley Authority
Knoxville, TN 37902

Dear Chairman Dean,

The Valley Environmental Network (VEN) wishes to thank you and the TVA staff (particularly EQS) for providing an opportunity for the Board to receive direct citizen input at the Environmental Constituency Meeting on September 21-22.

The three issues of energy conservation, river system management and hazardous waste are significant ones; the means and form of their resolution will affect all residents and industries in the Valley for many years to come. The magnitude of the task ahead will require involvement by committed individuals possessing not only technical knowledge but also broad understanding of how TVA decisions affect Valley communities and regions. Without access to local perspective, the best long-term decisions may not be made.

Under the VEN aegis, a cadre of such individuals has already developed some interesting approaches to necessary problem-solving. Additional qualified persons identified themselves during the September Constituency Meeting. All wish to develop positive interaction with the agency on issues of Valley-wide importance. This degree of interest was expressed in each issue workshop this year and goes far beyond the one-day dialogues that VEN has helped organize and sponsor for the 1985-86 meetings. The fact that community leaders in 6 TVA states wish to contribute to solving major problems confronting the agency is significant and represents a rare opportunity for the Board to obtain additional talent, demonstrate community involvement, and gain community support. These goals can be accomplished simultaneously with a Board commitment to involve interested citizens in the agency's decision-making processes, particularly those that involve river system management. The VEN proposes several possible mechanisms:

- *Regular release of program plans for public review and comment in advance of Board approval
- *Issue-specific advisory boards composed of representatives from pertinent citizen groups, industrial councils, state and local governments, etc., that could interact regularly with TVA staff in planning TVA programs. An example would be a River System Management Task Force.
- *A citizens' advisory council that could develop recommendations re given issues (as occurred at the last two Constituency meetings) and work directly with appropriate TVA staff to implement them.

4 1986 OFFICE

Other pertinent approaches could be generated in future discussions between citizen representatives and the TVA Board or staff members. Whatever the mechanism for citizen involvement, it is important to include outreach efforts for continuing involvement of new citizens and groups in the process. The intent would be to broaden the base from which ideas and recommendations flow. I welcome your thoughts on additional alternatives.

Of the three 1986 issues, the one eliciting the greatest response was river system management, for which there was standing room only. Segments of the public represented included recreational users, the tourist industry, state and local governments and conservation groups, all of whom have strong reasons for involvement. A general consensus is that this issue is of great regional significance and that the agency has a major responsibility (through its power and flood control programs) for maintaining and improving Valley water quality. It would appear that the time is ripe for the formation of a broad-based Task Force that could draw upon the expertise identified by the Governor's Commission on Tennesseans Outdoors and the new insight obtained by Valley residents during the current drought.

Enclosed with this mailing are the Recommendations developed during each of this year's issue workshops. Also included are a number of questions that were raised in discussion during and after the workshops. Feedback to the environmental constituency is an extremely important part of the process begun at the September meeting. To make maximum use of this opportunity, timely response to both the recommendations and queries is essential. If recommendations are rejected, we request that reasons be provided. The names and addresses of issue leaders are provided on the enclosed attachment.

Sincerely,

Annetta Watson

Annetta Watson
Valley Environmental Network

20/11/86

Workshop on the River System

We recognize the many positive regional changes brought about by TVA's numerous flood and erosion control programs in the Agency's history. However, an emphasis on power generation and the presence of an expanding population with greater and more sophisticated demands on the river system has resulted in acknowledged conflict among competing users for the same resource. This workshop discussion and the accompanying issue paper address the problems and pose some resolutions, but recognize that a topic of this magnitude requires additional assessment over the long term. We further consider that the best solutions can be developed only with greater involvement by the affected public.

Summary Points:

1. TVA has a responsibility for monitoring, maintaining, and enhancing water quality in the Valley.

   * One method would be to use an intergovernmental team approach initiated and facilitated by TVA.

2. TVA should redirect economic development funds to environmental and natural resource enhancement.

3. The Office of Agriculture and Chemical Development should actively address non-point source pollution.

4. TVA must make a greater financial commitment to implementing water quality management plans for each reservoir.

5. To the extent that specific costs can be attributed to the generation of power, the power system should pay. Examples of cases which should be considered are:

   - Tailwater improvement projects
   - Tellico wildlife habitat, water quality

Workshop on the River System

Specific Queries to the TVA Board

1. Could sections of reservoirs be set aside for non-powered water sports (e.g., canoeing, sailing,etc.)?

2. Could the agency work with affected states to develop practical zoning controls to restrict development on flood plains?

3. Sedimentation from agricultural runoff, construction projects and surface mining are serious problems in the Valley. Could non-point pollution abatement be made an agency priority? What are some of the mechanisms that could be implemented?

4. What are the agency's options for increasing dissolved oxygen in tailwaters?

5. Since TVA is the single agency that ties the entire watershed together, could TVA coordinate a valley-wide water quality monitoring network and information exchange among all affected state and local authorities?

Workshop on Energy Conservation

Preface

We want to express appreciation for the excellent work in developing and promoting conservation opportunities over the last 9-10 years, particularly in the area of residential conservation. We congratulate you in advance for your upcoming one millionth home audit.

We come to this discussion through our shared interest in resource conservation and protection of environmental quality. We further believe energy conservation is an essential component of TVA's core responsibility to promote the economic and social welfare of valley residents. We are convinced that TVA must continue its national leadership as a "yardstick" for other utilities to follow in aggressively pursuing gains in energy efficiency.

More specifically, we offer the following five recommendations:

1. The public sector needs a recognized process for influencing TVA programs--both power planning and energy services. Possible mechanisms include:

    - Release of annual program plans for public review and comment in advance of Board approval.

    - Creation of a diversified advisory board with representatives of business, utilities, citizen groups, and state and local governments, to routinely interact with TVA in power program planning. This might be modeled after the Northwest Planning Counsel.

2. The relationship of TVA to consumers through distributors needs to be strengthened.

    - Provide education outreach to distributors on economic value of demand reduction.

    - Conduct meetings with TVA staff, distributors and citizen consumers.

3. TVA can retain a "yardstick" status. Some suggestions for doing this, in the Residential Conservation Program include:

    - Recontacting the 40-50 percent of homes audited who do not partipate;

    - Increasing loan limits for previous participants;

    - Allow reauditing after a specified period;

    - Find ways to emphasize improved "closure rate" (for individual auditors) to distributors:
      awards, training, and invoice system; or

    - Work with distributors to extend Project Help Fund and retrofit rather than just paying on bills;

    - Reassess guidelines that prevent customers with past problems with paying bills from accessing the program;

    - Devise incentives to landlords;

    - Low cost/no cost program through distributors (e.g. flow restrictors/pads for utility outlets);

    Commercial and Industrial Conservation

    - Better outreach to achieve higher penetration

    Conservation Demonstrations

    - Good demonstrations need not be cadillacs--particularly in alternative generating technologies--demonstrations of ideas that are less than state-of-the-art may yield good results.

    Load Management

    - TVA needs more real world analysis of load management.

- Maintain "Cycle and Save" program and/or consider offpeak rate and cycled appliances.
- Extend interruptible rate to smaller, not direct-serve customers, too.

General Recommendations

- Continue constant and consistent quality control as a priority in conservation program
- Continue "Energy Efficient Education" efforts to public schools
- Increase media relations to promote conservation and support paid advertising.

4. Multiyear planning outlines and other policy statements should include emphasis on energy conservation as an essential TVA priority.

5. Develop a better understanding of how private sector relates to utility programs--primarily potential insulation contractors.

   - Consider a process for bringing small business people into planning earlier.

Questions

Where will TVA go with conservation efforts when and if nuclear units result in excess capacity?

What are TVA's plans for coal plants? Will they be retired as nuclear units come on line? Is there a master plan for maintenance, upgrade, and retirement?

RECOMMENDATIONS OF THE HAZARDOUS WASTE GROUP
TENNESSEE VALLEY AUTHORITY
ENVIRONMENTAL CONSTITUENCY MEETING
September 22, 1986

Participants in the Hazardous Waste workshop agreed that it is appropriate for the Tennessee Valley Authority to take a leading role in promoting responsible hazardous waste management, and in promoting meaningful citizen involvement throughout the decision-making process. This action is consistent both with TVA's responsibility for protecting Valley resources, and with its role as a national model. The group listed four recommended areas of involvement:

1. Technical assistance

a. To community groups and citizens, to help them become meaningfully involved in local environmental decisions such as cleanup of hazardous waste dumps and siting or permitting of hazardous waste facilities. Proposed mechanisms included the following:

- Establishment of a scientists' register to connect citizens' groups needing information with specialists willing to donate time.
- TVA staff assistance directly to citizen groups to answer technical and/or scientific questions.
- Direct grants to community groups to purchase their own technical assistance from neutral resources.

b. To states for developing criteria for:
- Siting hazardous waste treatment or disposal facilities.
- Cleanup options for existing hazardous waste dump sites.
- Permitting of facilities and industries that generate or use hazardous materials.

c. To industry and local governments in the following forms:
- Waste audits: provision of audits by TVA, and promotion of the use of audits to help businesses or municipalities determine ways to reduce waste generation.
- Seed money or challenge grants for development of waste reduction techniques that would then be available to other industries.
- Conferences on waste management and reduction as showcases for new technologies, both those developed under the seed programs and other innovative technologies.
- Dissemination of existing and new technologies to small businesses ("technology transfer"), by TVA staff or through contracts.
- Help in developing appropriate programs for transfer stations or other disposal options for small quantity generators (small businesses and households).

2. Education for each of the above three target groups (community groups and citizens, states, industry and local governments), to include:
- Training and public awareness about hazardous waste issues.
- Emphasis on the health effects (both chronic and acute) and avenues for exposure.

3. Assistance in the establishment of a National Waste Institute to provide information and assistance to citizens, industry, and government. Such an Institute should include provision for a Citizens' Advisory Board with enough authority to ensure the independence of the Institute.

4. Promotion of meaningful public involvement in policy decisions throughout the process of dealing with hazardous waste issues, not just at the end of the process after the basic decisions have been made. Inclusion of a citizens' group, such as the Valley Environmental Network, in TVA decisions about hazardous waste issues at the beginning of program development would provide such involvement in TVA programs and could serve as a model for public involvement in other areas. TVA could also promote such involvement through the provision of technical assistance to community groups, as mentioned in 1(a).

Workshop on Hazardous Waste

Specific Queries to the TVA Board

1. TVA is perceived as a neutral party in controverises involving the disposition of hazardous waste. There is general agreement on the need to reduce volume. Could a National Waste Institute provide emphasis and develop regional approaches to waste reduction?

2. We understand that the Univ. of Tenn. has initiated hazardous waste research and issue analysis. Since resources are thin, we do not wish to see duplicative effort between the Agency and UT. We encourage collaboration between the two institutions toward the meeting of common goals; further, we consider citizen input to be a vital part of such collaboration. Could this be an area where TVA could provide leadership?

3. Lack of resources in small businesses, and lack of incentive for change (even when information and resources for pollution prevention are available) were identified as continuing obstacles to adoption of better hazardous waste technology. Could TVA's "existing industry" program be used and expanded to help small quantity generators of hazardous waste reduce their waste streams? Could TVA institute a matching grants program for such efforts?

STATEMENT OF THE COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION

I am Carolyn S. McNeil, President of the Colorado River Energy Distributors Association ("CREDA"). I am also General Manager of Utah Associated Municipal Power Systems. My business address is 8722 South 300 West, Sandy, Utah 84070 (Telephone: 801/566-3933).

On behalf of CREDA, I wish to thank the Chairman and members of this Subcommittee for the opportunity to register support for certain aspects of the Administration's FY 1988 Budget. Specifically, CREDA's comments will be directed at requests for appropriations for the Bureau of Reclamation and the Western Area Power Administration.

CREDA is a non-profit Colorado membership corporation comprised of 18 publicly-owned electric utility systems, organizations of publicly-owned electric utility systems and state agencies located in the Colorado River Basin states of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. Together, CREDA's members' have retail sales of electricity approximately equal to those of Consolidated Edison of New York. A complete list of CREDA's members is attached for your reference.

CREDA represents statutory preference customers which purchase nearly all of the electric power and energy produced by the Colorado River Storage Project plus significant portions of the Boulder Canyon and Parker-Davis Projects and 100 percent of the Rio Grande Project. These purchases are all from the Western Area Power Administration. CREDA's members render electric service to hundreds of thousands of rural, residential, commercial and industrial customers.

A. Department of the Interior, Bureau of Reclamation

CREDA supports the Bureau of Reclamation's overall request for FY 1988 New Budget Authority of $949,113,000. Although the FY 1988 request appears to be adequate to carry out the Bureau's current program, CREDA is troubled by what appears to be a continuation of the President's no "new starts" policy as far as major federally-funded water and power projects are concerned. This policy represents a continued restriction on the development of the Nation's water and power resources.

CREDA acknowledges that the Nation faces an extreme budget crisis; however, CREDA must urge this Subcommitee not to lose sight of the fact that the Nation also faces a crisis of another nature. Every year needed water projects are deferred means another year of lost water development benefits. Rather than being stored and applied to the land, water is allowed to run to the sea. Farms are not irrigated, crops are not developed and, ultimately, the Nation's gross national product does not keep pace with the needs of the Nation's citizens.

CREDA urges this Subcommittee to carefully weigh the Nation's fiscal and water development and insure that at least the amounts requested in the President's Budget for the Bureau of Reclamation are approved. The Subcommittee should also consider augmenting the President's request where appropriate. Continuation of what is essentially a no "new starts" policy for major federally-funded water projects is essentially continuation of a no growth policy for rural America -- a policy which this country cannot afford to perpetuate much longer.

B. Department of Energy, Western Area Power Administration

The Western Area Power Administration plays an important role in the delivery of electric power from federal water projects. Western is a vital link in making power resources available to the Nation, as well as helping generate the revenues required to pay back the cost of federal power and irrigation projects. Western's Colorado River Storage Power System and Parker-Davis System are particularly important to CREDA members. CREDA supports the full President's FY 1988 New Budget Authority Budget Request for Western of $295,515,000 and obligational authority of $55,600,000 for the Colorado River Basin's Power Marketing Fund.

C. Sale of PMA's

CREDA continues to be deeply concerned about a very troublesome proposal which the Administration has continued to advocate notwithstanding previous opposition by the Congress. It is the proposal to "de-federalize" the Department of Energy's Power Marketing Administrations. Members of this Subcommittee have expressed their opposition to the Administration's proposal in strong and clear terms. CREDA joins this Subcommittee in opposing the sale of these valuable assets of the Nation's taxpayers.

CREDA notes that as of September 30, 1985, Western has repaid some $1.8 billion to the Treasury for outlays in prior years in constructing water and power projects. Western is "on time" in retiring its remaining $2.4 billion in unpaid investment. Therefore, CREDA finds it strangely anomalous in this day of unusually restricted budgets for anyone to propose the sale of federal assets which return to the government two to three times more in revenues than they require in appropriations. While the Administration has promised to seek legislation to implement any plan it ultimately adopts for the sale of the power marketing administrations, it is wasteful to even study de-federalization, as members of the Subcommittee have aptly pointed out.

CREDA is also concerned that the Administration appears to be anxious to modify current PMA repayment practices, as indicated recently in connection with the Animas-LaPlata Project. CREDA notes that as far as Western is concerned, current repayment practices have served the federal government well. Under the law, rates are to be set as low as possible, consistent with sound business practices. Western's rates generally conform to this principle and, since they have resulted in

Western being "on time" in retiring unpaid federal investments in water and power projects, should not be altered. CREDA's resolution adopted earlier this year on this subject is attached to this Statement.

In closing, may I say on behalf of CREDA that it is a pleasure to appear before you today. CREDA supports this Subcommittee's efforts to continue the development of the Nation's water and power resources and urges that it take steps to insure that the Administration shares that commitment and continues a program of healty resource development in the West.

COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION, INC.

Following is a detailed listing of the Colorado River Energy Distributors Association ("CREDA") and systems which are associated with or comprise such Member for purposes of participation in CREDA.

CREDA Member	Associated Systems
Arizona Municipal Power Users Association	City of Safford and Towns of Thatcher and Wickenburg, Arizona; San Carlos Irrigation Project; San Carlos Irrigation District; Cortaro-Marana Irrigation District; and Hohokam Irrigation and Drainage District.
Arizona Power Authority	Chandler Heights Citrus Irrigation District; Queen Creek Irrigation District; and San Tan Irrigation District.
Arizona Power Pooling Association	City of Mesa, Arizona; Electric District No. 2,; and Arizona Electric Power Corporation (including Anza Electric Coop; Duncan Valley Electric Coop.; Graham Co. Electric Coop; Mohave Electric Coop.; Sulphur Springs Valley Electric Coop.; and Trico Electric Coop.).
Colorado River Commission of Nevada	Boulder City, Nevada; Overton Power District No. 5; Lincoln City Power District No. 1; and Valley Electric Association.
City of Colorado Springs, Colorado	(Not applicable)
City of Farmington, New Mexico	(Not applicable)
Intermountain Consumers Power Association, Utah	Cities of Beaver, Bountiful, Enterprise, Ephraim, Fairview, Fillmore, Heber Light & Power, Holden, Hurricane, Hyrum, Kanosh, Kaysville, Lehi, Logan, Meadow, Monroe, Morgan, Mt. Pleasant, Murray, Oak City, Parowan and Spring City, Utah; Bridger Valley Electric Assn.; Dixie-Escalante Rural Electric Assn.; Flowell Electric Assn.; Garkane Power Assn.; Moon Lake Electric Assn., Utah; and Mt. Wheeler Power, Inc., Nevada.
Irrigation and Electrical Districts Association of Arizona	Ak-Chin Indian Community; Electrical Districts 3, 4, and 5 - Pinal Co.; Electric District No. 6 - Pinal and Maricopa Cos.; Electrical District No. 7 - Maricopa Co.; Maricopa County Municipal Water Conservation District No. 1; Ocotillo Water Conservation District; Roosevelt Irrigation District; Roosevelt Water Conservation District; and Wellton-Mohawk Irrigation District.
Navajo Tribal Utility Authority, Arizona	(Not applicable)
Plains Electric Generation and Transmission Cooperative, Inc., New Mexico	Kit Carson Electric Coop.; Otero County Electric Coop.; Mora-San Miguel Electric Coop.; Northern Rio Arriba Electric Coop.; Sierra Electric Coop.; Springer Electric Coop.; Socorro Electric Coop.; Central New Mexico Electric Coop.; Continental Divide Electric Coop.; Columbus Electric Coop.; Southwestern Electric Coop.; Jemez Mountains Electric Coop., New Mexico; and Navopache Electric Coop., Arizona.

CREDA Member	Associated Systems
Platte River Power Authority, Colorado	Cities of Estes Park, Ft. Collins, Longmont, and Loveland, Colorado.
Provo City, Utah	(Not applicable)
Salt River Project Agriculture Improvement and Power District, Arizona	(Not applicable)
Silver State Power Association, Inc.	Valley Electric Association, Inc.; Overton Power District No. 5; Lincoln County Power District No. 1; Boulder City, Nevada.
Strawberry Water Users Association, Utah	Cities of Payson and Springville, Utah.
Tri-State Generation and Transmission Association, Colorado	Highline Electric Assn.; K.C. Electric Assn.; Morgan County Rural Electric Assn.; Mountain Parks Electric, Inc.; Mountain View Electric Assn., Inc.; Poudre Valley Rural Electric Assn., Inc.; Union Rural Electric Assn. Inc.; Y-W Electric Assn., Inc., Colorado; Chimney Rock Public Power District; The Midwest Electric Membership Corp.; Northwest Rural Public Power District; Panhandle Rural Electric Membership Assn.; Roosevelt Public Power District; Wheat Belt Public Power District, Nebraska; Big Horn Rural Electric Co.; Carbon Power & Light, Inc.; Garland Light & Power Co.; Hot Springs Rural Electric Assn., Inc.; Niobrara Electric Assn., Inc.; Riverton Valley Electric Assn., Inc.; Rural Electric Co., Inc.; Sheridan Johnson Rural Electrification Assn.; Wheatland Rural Electric Assn., Inc.; Wyrulec Company, Wyoming.
City of Truth or Consequences, New Mexico	(Not applicable)
Utah Municipal Power Agency	Cities of Manti, Nephi, Salem, and Spanish Fork and Town of Levan, Utah.
Wyoming Municipal Power Agency	Cities of Cody and Powell and Towns of Fort Laramie, Guernsey, Lingle, Lusk, Pine Bluffs, and Wheatland, Wyoming.

RESOLUTION CONCERNING CHANGES IN THE REPAYMENT STRUCTURE FOR FEDERAL POWER RESOURCES

WHEREAS, the Congress of the United States since 1877 has continuously pursued a policy of preserving public resources for direct public use; and

WHEREAS, fundamental to the application of that policy is a method of distribution designed to provide these resources in a systematic and reliable manner and upon equitable terms; and

WHEREAS, federal power projects are public resources and the Colorado River Energy Distributors Association's ("CREDA") 18 members and their more than 100 associated municipal and rural electric utilities and irrigation districts qualify for and do purchase power from the Colorado River Storage Project ("CRSP"); and

WHEREAS, these entities have made past commitments and future long range plans based on the reliability of specific terms and conditions governing their power purchases. Relying on the federal preference laws they opted not to install their own generating facilities (facilities that would today be relatively low-cost) but rather to buy the then more expensive CRSP power; and

WHEREAS, to disrupt the financial terms that have ruled public power customers' investments for more than 50 years, such as proposed by recent agreements associated with the Animas-La Plata Project, would do substantial harm to the individual ratepayers whose electric rates depend directly upon the availability of public resources and the longstanding commitment of the Federal Government as to the methods of financing those resources; and

WHEREAS, the Animas-La Plata Project is, and has been since 1968, an authorized participating project of the CRSP and thus is subject to the terms and conditions surrounding the development and financing of the greater CRSP; and

WHEREAS, the interests shared by CREDA's members are like those recognized by the Supreme Court of the United States as claims which should not be arbitrarily undermined. It is a purpose of property law to protect those claims upon which people rely in their daily lives. The case law recognizes that those who are currently relying on government resources and are threatened by reduction or loss of those resources have an interest substantially larger than others who might otherwise benefit; and

WHEREAS, CREDA's members made financial commitments and stood by those commitments at substantial risk and initially high cost while fulfilling their side of a specific bargain and assuring full and timely repayment of the nations's investment; and

WHEREAS, therefore a unilateral change in terms of the ongoing development scheme would be tantamount to a breach of contract by the Federal Government.

NOW, THEREFORE, BE IT RESOLVED that CREDA is opposed to any departure from the traditional method of establishing rates and repayment for CRSP resources; and

BE IT FURTHER RESOLVED that CREDA is specifically opposed to current proposals to change these longstanding and equitable terms and conditions for repayment by legislation which will require (1) repayment for the power features of the Animas-La Plata Project on a 30-year straight line amortization basis, or (2) any other departure from traditional repayment methods.

STATEMENT OF THE NATIONAL DEMOCRATIC POLICY COMMITTEE

I appreciate the opportunity to testify on the issues of energy and water development before you today, Mr. Chairman.

The Senate Energy and Water subcommittee has decided to cancel oral testimony from public witnesses altogether. I think this is unfortunate. The signal it seems to send is why bother to hear from constituency groups when there is no money in the budget.

If this is the underlying or unspoken premise, it is wrong headed thinking. Infrastructure investments are a crucial part of a workable economic recovery program.

I would like to quote excerpts from "President Reagan Makes Major Political Blunder," a March 29 statement by Mr. Lyndon LaRouche on the veto of the highway bill, which addresses the salient point for all infrastructure programs:

"...That bill (highway bill) could be the key to whether the United States shifts into policies which get us out of the oncoming economic depression, or not.

"Overall, the highest level of repair of what we call the basic economic infrastructure of the United States, was reached during 1970. This involves such hard elements of infrastructure as railways, ports, inland waterways, highways, fresh-water management, production and distribution of basic energy supplies, and the basic industrial-urban infrastructure of our urban areas. It also involves such elements of basic social infrastructure, as educational and health institutions. Some parts, such as railways, were in bad repair during 1970, but the level was the highest of the post-war period overall.

"Since 1970, the United States has spent much less on basic economic infrastructure than was needed to keep infrstructure up to the level of repair existing in 1970. Two years ago, my associates and I conducted a study of this problem. We found that more than $3 trillions would have to be spent, in 1983 dollars, to bring infrastructure up to the level of repair existing in 1970.

"A lot of this decay of infrastructure was buried in the accounting-systems used by utilities and at various levels of government. In federal, state, county, and municipal budgets, the money not spent for needed maintenance of infrastructure does not show up as a depreciation-loss, as it would in the accounting of a manufacturing firm; it shows up as a saving in budgeted level of expenditures. To the degree that utilities involved write up the value of real-estate holdings and certain other assets, such nominal capital gains shown in accounting records cover up the losses caused by depreciation. One sees the truth, only if we put aside those misleading budgets and accounting records, to look at the condition of infrastructure in our urban areas, in transportation, and so forth, and total up the amounts which must be spent to bring infrastructure physically up to 1970 levels of repair.

"In the post-war U.S. economy, every overall improvement in infrastructure has led to a comparable increase in productivity about eighteen months later. Every margin of decay in infrastructure caused a downward trend in output-rates, in about the same way. In modern times, the total investment in basic economic infrastructure is the single largest item of investment in the entire national economy. Without adequate infrastructure, U.S. farms and industries can not operate competitively. U.S. urban and suburban areas can not sustain industry and industrial employment. With the presently catastrophic and worsening shortages in electrical energy capacities, a general economic recovery in the U.S. would be impossible.

"The job of economic recovery means, revitalizing farms and industry, reopening old work-places, and shifting people away from low-paid service jobs, into higher-paid, productive industrial employment. Once this step is begun, we then concentrate on promoting high rates of industrial investment in new and improved work-places. Once we move into that second phase of the recovery program, the economy will begin to take off, and with increased income of households businesses, the tax-revenue base of the federal, state, and local governments will bring government expenditures into line with government receipts.

"However, revitalizing agriculture and industry depends upon putting infrastucture back into repair. A large-scale program for solving the worsening fresh-water crisis, and rebuilding rails, highways, inland waterway systems, and ports, is one indispensable step. Next, we must move quickly to build up our capacity for production of electricity, and to improve our school systems and health institutions.

"So, the water bill and the highway bill are to be seen as an essential part of getting an economic recovery under way. They are not symbolic gestures, or "make-work;" they are very small, but very important actions which the nation needs right away.

"The President's line of argument is, that we don't have the money to spend on such things; he insists, we already have an economic recovery in progress. He also insists, that his philosophy demands cutting back more and more on government investments in the economy. That's the issue of the fight over the highway bill.

"We don't have the money, but we would if we simply put enough people back to work in industrial jobs, including constructing infrastructure. The President's thinking is backwards. To have enough federal money for necessary things, we must first increase the tax-revenue base. This can be done by increasing tax-rates. However, to increase taxes on lower to middle income households, agriculture, and industry at this time, would depress the economy so much that the total federal revenues under the higher tax-rates would probably be less than at present tax-rates. The other option, is to stimulate employment and production in agriculture and industry; the stimulant of increased employment in infrastructure building, is one of the key places to begin.

"We did it before, in getting out of the 1930s depression. We must now do it again. The majority of the Congress is right, and the President is very badly mistaken. One hopes that a massive override of his veto helps bring the President to accepting reality."

Mr. Chairman, I want to provide for the committee a reference file of Quarterly Economic Reports prepared by the Executive Intelligence Review which documents the $3 trillion infrastructure investment shortfall.

I would call special attention to the 2nd and 3rd Quarters report of 1986 which contains a discussion by Mr. LaRouche on reaching a proper economic analysis of infrastructure projects. That section is entitled, "Proper methods for accounting practice: estimates of cost and profitability of major infrastructure projects."

WATER

The nation continues to face major water shortage problems which are not being addressed. The North American Water and Power Alliance (NAWAPA) proposal, by providing 160 million acre feet of water a year, can address every major water crisis on the continent from the Great Lakes and St. Lawrence Seaway to the Mississippi, Southern California, Arizona, Texas, the High Plains, Mexico's Sonora and La Laguna regions, and U.S. Eastern Seaboard municipal reserves. The Congress must clear the roadblocks and update the feasibility studies for this project, prepatory to undertaking construction.

ENERGY

The United States is now in the throes of a devastating depression and deindustrialization, which masks the fact that there is no energy glut in this country, as some have claimed. In fact, the situation is just the opposite: America does not now have the energy to grow and prosper as an industrial nation. If the nation adopted the proposed 50-year mission to return to the Moon and then move on to colonize Mars, we would very soon have a severe energy shortfall. And if the nation adopted a crash program to implement the Strategic Defense Initiative, and then take the spinoff laser technologies and introduce them into the civilian economy, our present energy grid would not be able to keep pace with the economic boom caused by the laser-technology-produced increases in productivity. Our estimate is that the United States needs about 650 gigawatts of new capacity by the year 2000, and another new 650 gigawatts to meet the needs of the developing sector. This would be needed as the U.S. returned to the traditional 7% per year growth rate in electricity use, that was characteristic during the 1960s.

The actual energy situation, including the destruction of the domestic oil industry, presents a threat to our national security. As the recent Department of Energy's "Energy Security" report shows in detail, the United States must "take steps" now to protect its energy security and thus its national security. But to succeed in providing this nation with real energy security requires not simply "steps" but major policy reversals--namely, massive investment in the nation's infrastructure and advanced energy sources.

Such a program will be both cost-efficient and energy efficient if it is accompanied by a renewed commitment to develop the most productive forms of energy yet known to man: nuclear fission and fusion power. Even in the face of the Chernobyl disaster--an accident which could not happen in a U.S. nuclear plant--the Soviets have remained commmitted to the rapid development of nuclear power because they know that it is the most efficient way to make their economy grow. The Soviets plan to quintuple their nuclear power capacity by the year 2000. The British just decided, after a exhaustive two-year study, that they will go ahead with a new pressurized water reactor because nuclear power is cheaper and more efficient. Japan announced last year a 45-year plan to make nuclear its primary energy source because nuclear power "is superior in both energy security and economy." France will be 75 percent nuclear by the turn of the century, for the same reason.

The United States cannot afford to let its nuclear capacity be buried under antinuclear ignorance and media fairy tales.

The United States, once the world leader in nuclear technology, has already taken a back seat in advanced nuclear technology. To catch up, and to make a serious effort to reindustrialize our way out of the depression, we must accelerate work on the next-generation nuclear reactors, the high temperature gas-cooled reactor and the fast breeder reactor, and begin in the next three years to mass-produce standardized modular reactors of both types. More immediately, Congress could begin to reverse the process of nuclear decline, by implementing regulatory changes that will put some of our stalled and mothballed light water reactors on line. As the October 1986 report of the DOE Energy Research Advisory Board said, "the Federal Government technical nuclear regulatory process has become a major component of the institutional impediment to the continued deployment of nuclear energy for electricty generation in the United States." Finally, Congress and the President should learn a lesson from Britain, France, and Japan, and issue a policy statement that affirms the necessity of nuclear energy for the growth and development of the nation. Such a policy statement must begin to educate the American population with accurate scientific information about nuclear energy and energy in general, to counter the outrageous antinuclear allegations of the media, anti-science environmentalists, and opportunist politicians. Over the past 15 years, our population has been made stupid by the proliferation of these lies and the cowardice of those who know better than to believe the liars.

The Need for Fusion

At the same time, we must accelerate the timetable for commercial fusion reactors. There is no scientific barrier to meeting the goals spelled out in the 1980 Magnetic Fusion Energy Engineering Act: Whether or not the United States has a fusion engineering reactor by the 1990s and a commercial prototype reactor by the year 2000 is purely a question of whether the U.S. government provides the necessary funds to get the job done. It is immoral and stupid to argue that because our industries are in decline and because people are lowering their living standards through so-called conservation of energy that we do not need to develop the cheap, safe, clean, and virtually inexhaustible energy of fusion until the mid-21st century.

There is another--and more important--reason why we must move rapidly to develop advanced fission reactors and master the technologies of controlled thermonuclear fusion power. If the next century is to be an American Century in space, then it will only be so because we have mastered the technologies first of fission-propulsion of space ships and then of fusion propulsion. Only this will reduce the constraints of time to reasonable ones and give us the ability to haul millions of tons of freight into space. Only then can we reasonably hope to follow our first tentative steps upon the Moon with cities of a half million or more on Mars before the middle of the next century. Such cities will exist only if we have in space, minimally, an order of magnitude increase in energy per capita over that in the United States today.

Is this a far-fetched dream? We say no more so than Columbus's journey across the Atlantic.

LETTER FROM GOV. GERALD L. BALILES OF VIRGINIA

April 21, 1987 4/22

The Honorable J. Bennett Johnston
Chairman
Senate Appropriations Subcommittee
on Energy and Water Development
United States Senate
136 Hart Senate Office Building
Washington, D.C. 20515

Dear Chairman Johnston:

At the Appalachian Regional Commission's (ARC) February meeting, the Governors unanimously approved a program policy that charts a new course for the ARC.

The policy builds on the Commission's current emphasis on infrastructure by granting states greater flexibility to design and implement programs that encourage investment, improve the region's economic competitiveness, and address human resource needs. In Virginia, we have already begun the process of reexamining our priorities to determine the best way of making our Appalachian communities more competitive in today's economic marketplace.

Thousands of Virginians in the most distressed section of our state have been provided with job training and education, jobs, housing, and health care that would not have been available without ARC. However, if we are going to build on the success of this program, adequate funding will be necessary to implement the new program policies adopted by the Governors' fiscal 1987 budget request.

With kindest regards, I am

Sincerely,

Gerald L. Baliles

STATEMENT OF L. GARDNER NEELY, VALLEY ENVIRONMENTAL NETWORK

As a member of the Valley Enviromental Network representing Georgia, I am submitting my comments on the non-power appropriations hearings for your consideration of funding and policy for the Tennessee Valley Authority.

I believe that the TVA needs to be supported in its efforts to reaffirm its committment to the well being of this one half-century-old institution in the region.

While grateful for the development of the region since the great depression, and apprehensive about the problems of nuclear power generation, we find as did Chairman S. David Freeman in 1980, that water quality and health is threatened by TVA's own activities, as well as those of industry.

Depleated oxygen and resulting fish kills, contaminated groundwater, acid rain from SO2 emissions, coalmining runoff, PCB production, as well as erosion of farmland, current landfill practices and hazardous wastes generation all pose problems which are being addressed but need renewed vigor by the agency.

We challenge the TVA to be inclusive in the planning process for remediating these conditions. Current Chairman Dean has not responded to the proposals of the Valley Environmental Network as of mid-March 1987. River system management, hazardous waste and energy conservation are the focus of this citizens group concerns, and we have submitted recommendations for the planning process in these areas.

Water shortage during summer fall of 1986 underscored the need for water quality improvement & supply.

River reaches in the Chattahoochee National Forest near Lake Notley, Lake Chatuga and Blue Ridge are cited by a TVA report as among regional river systems that seasonally do not meet state dissolved oxygen criteria because of TVA Hydropower Dam releases. This means fish kills, bank erosion, siltation and loss of farmland downstream of dams with hydropower releases, increased costs for wastewater treatment.

Groundwater contamination in Georgia is evident or possible in Dalton, Calhoun, Cedartown, White County, and Rome where landfills and industrial sites have listed by the EPA as potential hazardous waste disposal sites. Dade, Walker,and Whitfield Counties share the threat of groundwater contamination by virtue of proximity to the documented contamination in the Chattanooga, Tennessee area.

Abandoned coal mine lands in Georgia, while small compared to Tennessee's 10,000 acres or Virginia's 15,000 acres, still include some 127 acres which have not yet been reclaimed. Some 5 acres have been treated in Georgia by a TVA 4 state plan.

Of the approximately 1,000 hazardous waste sites in the TVA identified by the Emergency and Remedial Response Information System (ERRIS), Georgia has some 17 sites, including 6 sites in Walker County, 3 in Catosa, 4 in Gordon, 1 each in Chattooga, Union, Rabun, and Murray Counties.

Seven North Georgia counties will peak with sanitary landfill capacity less than 5 years.

While the EPA's Superfund program is leading the cleanup, TVA is addressing the problem its own power plants and private industry generate. TVA's effort to clean up such sites needs to be given additional support and guidance from community members as well as professional technical assistance personnel. We urge you to insist on public participation on these pressing problems, and to give adequate support and funding for the solutions required.

Thank you for your consideration of this written testimony.

STATEMENT OF THE IOWA DEPARTMENT OF NATURAL RESOURCES

DRAFT

COMMENTS ON CORPS OF ENGINEERS BUDGET

During the course of debate over the budget for the Corps of Engineers there will be many elements to be considered. From Iowa's perspective, there must be sufficient consideration given to the nation's obligations to all aspects of the maintenance of its great river resources. Wise, comprehensive management of our major inland waterways is just as essential to the country's future as its coastal water resources. Iowa, with its eastern and western borders essentially defined by the Mississippi and Missouri Rivers is in a particularly dependent yet opportune position with regard to these national water treasures.

Both of these great rivers serve a variety of purposes. Both require a multi-faceted approach to investing in the development and maintenance of projects to maximize their potential value to our own and future generations.

The Mississippi River is a major highway of commerce for the nation's heartland. Iowa depends on the river to transport much of the product of its agricultural bounty to national and international markets. The complex of locks and dams are essential to maintaining this transportation system.

Equally important to Iowa and to the other upper Mississippi River States is the maintenance of the river and the habitat adjacent to it to support the wealth of wildlife management and recreational uses. Recreation and tourism on the river are an integral part of Iowa's strategy for long term economic development. We recognize as did Congress, that the detrimental impacts of transportation and other commercial uses of the river give rise to an equivalent need for a commitment to maintenance of the resource for recreational and wildlife purposes as well.

From this recognition comes the Environmental Management Program (EMP). The first two years of this project have seen a substantial level of activity by the Corps, the Fish & Wildlife Service and the States. Much of the foundation for the program including the management and coordination mechanism are now in place. The States have been diligent in identifying and promoting projects which will successfully fulfill the promise of the EMP purpose of developing and maintaining the habitat along the river. In Iowa, we have already developed several projects which we are confident will demonstrate the value of this program. Some are proposed for planning, design and construction with present funding.

On the other hand, the promise of the EMP projects will never be fully realized unless substantially more resoruces are dedicated to them. The administration advocates a total of approximately $4 million for FY88. The States have worked together to develop an alternative plan calling for an appropriation of $10 million for FY88 for the EMP program. We view this request as wholly supportable and essential if Congress seriously intends to be true to its commitment to this effort. On the theory that the maintenance of wildlife and recreational values were equal in value to maintenance of transportation system efficiency, Congress designed the Environmental Management Program with financial equivalency to the construction cost of the second lock at Lock and Dam 26 at Alton, Illinois. While they have authorized financial equivalency; the administration of the program, identified needs, benefits and management of the construction of the second lock and the EMP are independent of one another. In other words, the merits of each must stand on their own. Although the second lock's requirements are low for FY88, for next year they are planned to exceed $24 million. A major distinction between the two efforts must be made. The lock is a single major project with large capital outlays during the construction phase. The Environmental Management Program will consist of many smaller projects which require collectively more planning and design effort. The design work must begin in earnest now if the promise of the EMP is ever to be fulfilled. We have attached descriptions of Iowa projects which we believe illustrate both the nature and value of this effort.

On the Missouri, similar circumstances exist, but the status of state and federal activities is somewhat different. The provisions of PL 99-662 adopted by Congress last year were the first authorization for funding to provide mitigation for loss of fish and wildlife habitat on the Missouri. Past projects by the Crops of Engineers on the Missouri have implemented a Congressionally authorized plan to modify the structure of the Missouri to support navigation, stabilize its banks, improve flood control and store water for later use and hydropower generation. Unfortunately, the broad expanse of wetlands and riverine habitat typical of the River's meandering nature were decimated by confinement to a narrow channel. The degradation of the river channel has caused further damage by lowering or drying the oxbow lakes that are a critical remaining legacy of what once was.

While we appreciate Congressional recognition of these losses through the authorization of funds for mitigation on the Missouri, the Administration views this program as having little or no priority. As a result, the Corps FY88 budget shows no request for appropriation for Missouri River mitigation. We disagree with that view and ask Congress to add this item to the Corp's budget.

Additionally, we would ask the Congress to reaffirm its intent to require the assessment of additional needs for mitigation on the Missouri beyond that originally recommended by the Corps. The current Corp's position gives us cause for grave concern. The official view is that there are no funds for the study, the study is a low priority, and no funding is necessary or requested. We seek funding for the study, and recommend that the appropriation call for a joint study to be conducted by the Corps, the U.S. Fish and Wildlife Service and the states. The Corps itself, by it demonstrated lack of interest, can not be expected to generate more than an endorsement of their first report, which recommends a mitigation level of only about 10% of the habitat losses. it would be more productive to have an analysis of the difference between the earlier report by the Corps and the recommendations by the U.S. Fish and Wildlife

Service regarding mitigation needs. We believe that a workable compromise lies between the two.

Finally, we believe that the Congress should give favorable consideration to the funding of the Perry Creek watershed project. This project enjoys strong local support as an essential flood control activity even with the application of local cost share requirements.

This flood control project which as been considered for almost 50 years, has been properly scoped to provide improvements to existing structures as well as new works to provide cost effective protection for a substantial urban area.

The Corps of Engineers budget includes $174,000 to finish the final design work on the project. We support the completion of this work and ask Congress to maintain this project in the budget.

In western Iowa there are a diversity of water resource problems. Flooding is the primary concern at times, while the need for a reliable source of quality water predominates during dryer years. While there is a widespread need for evaluation of alternatives, this Northwest river basin has the highest priority for initial effort. We support the completion of a reconnaissance study as the vehicle to initially evaluate the needs of the area and to identify the scope of the problems to be addressed by later feasibility studies.

Over the years, assistance under Section 14 of the Flood Control Act of 1946 as amended, for the Emergency Streambank Protection program, has provided Iowa with necessary emergency assistance to save structures threatened with damage and destruction in emergency circumstances. This is an essential form of assistance which has a reasonable cost. We are concerned whether there are enough funds budgeted for this program to meet anticipated needs.

FACT SHEET

LANSING BIG LAKE
POOL 9, UPPER MISSISSIPPI RIVER, IOWA

LOCATION: Lansing Big Lake is a 3,000-acre backwater lake located on the Iowa side of the Mississippi River in pool 9, approximately 3 miles above Lansing, Iowa. The site lies within the Upper Mississippi River Wildlife and Fish Refuge.

RESOURCE PROBLEM: Sediments are entering Big Lake through several side channels at the upper end of the lake. These sediments are increasing turbidity and slowly filling the lake, significantly degrading the excellent fish and wildlife habitat value of the lake.

PROPOSED PROJECT: The proposed project would place closure structures with controls on at least two of the major sediment-transporting side channels entering Big Lake (Big Slough and Little/Big Slough). During high flood flows, the closure structures would be overtopped and floodwaters would flow freely. As waters recede, the water control structures would be closed to keep sediment-laden water out of the backwaters. During normal flows, the structures would be opened and the cleaner water would be diverted into the backwater area.

PROJECT OUTPUTS: The project would retard the effects of sedimentation on Big Lake and protect up to 7,000 acres of valuable backwater fish and wildlife habitat in Big Lake and adjacent areas from accelerated degradation. It would also decrease turbidity, which would enhance fish and wildlife habitat through the establishment of emergent aquatic plants. Project benefits would be quantified during preparation of the definite project report.

FINANCIAL DATA: The General Design phase of the project is estimated to be $90,000 and construction costs are estimated at $1,000,000. Average annual operation and maintenance costs are estimated at $5,000. Funding would be 100-percent Federal because the project is located on the Upper Mississippi River Wildlife and Fish Refuge.

FACT SHEET

BUSSEY LAKE
POOL 10, UPPER MISSISSIPPI RIVER, IOWA

LOCATION: Bussey Lake is a 213-acre backwater lake located on the Iowa side of the Mississippi River in pool 10, approximately 2 miles above Lock and Dam 10 near Guttenberg, Iowa. The site lies within the Upper Mississippi River Wildlife and Fish Refuge.

RESOURCE PROBLEM: Bussey Lake supports an excellent sport fishery but heavy sediment loads from the Buck Creek watershed are reducing water depths in the lake, resulting in increased growth of emergent aquatic plants and accelerated eutrophication. This problem is expected to continue, resulting in accelerated degradation of the lake and eventual loss of the lake fishery.

PROPOSED PROJECT: The proposed project would reduce sediment transport into the lake by redesigning a culvert on Buck Creek to include a water control structure that would be used to reroute the flow of Buck Creek during periods of high flow when it contains sediment-laden waters. Key areas of Bussey Lake would be dredged to rehabilitate fishery habitat.

PROJECT OUTPUTS: The project would reduce sediment transport into Bussey Lake by 80 to 90 percent. When the water control structure is used, approximately 2 feet of water would be impounded over 120 acres of backwater area which would provide benefits to waterfowl. Deepening of key areas of Bussey Lake would improve the fishery habitat by expanding the available fish habitat.

FINANCIAL DATA: The General Design phase of the project is estimated to be $50,000 and construction costs are estimated at $400,000. Funding would be 100-percent Federal because the project is located on the Upper Mississippi River Wildlife and Fish Refuge.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM
FACT SHEET

BROWN'S LAKE, IOWA, REHABILITATION AND ENHANCEMENT
POOL 13, UPPER MISSISSIPPI RIVER
JACKSON COUNTY, IOWA

LOCATION: Brown's Lake is a 450 acre backwater complex approximately 10 miles south of Bellevue, Iowa, on the Iowa side of the Upper Mississippi River navigation channel.

RESOURCE PROBLEM: This valuable backwater area has gone from a lake which was up to 6 feet deep to a 12-18 inch deep marsh complex. Continued siltation increases the probability of winterkill of fish and will negatively impact what has been an important migratory waterfowl, fishery, and furbearer area. If nothing is done, the ongoing siltation process will transform the open water area into lowland brush habitat further reducing the available open water, submergent, and emergent aquatic vegetation in Pool 13.

PROPOSED PROJECT: The proposed project, pending planning, engineering, and environmental review, would use the following procedures to slow the siltation process: a dike extending from the Green Island levee having a water control structure; dredging of the inlet to Upper Brown's Lake; and a connected dredge cut to Lower Brown's Lake to improve fisheries habitat. A related, but independent proposed project (Brown's Lake, Iowa, Habitat Rehabilitation and Enhancement, Erosion Control Component) will reduce siltation from the contiguous upland's Smith Creek watershed.

PROJECT BENEFITS: The proposed project is located within the Upper Mississippi River Wild Life and Fish Refuge and would produce national benefits. It would reduce the ongoing siltation. Waterfowl use days, waterfowl production, other waterbird use days, fish production, and other furbearer production will be increased. The project will help maintain the otherwise vanishing backwater habitat critical to the maintenance of migratory waterfowl on the Mississippi Flyway, particularly Canadian geese. Dredging will provide refuge for fish in deeper water during winter and increase habitat diversity.

FINANCIAL DATA: Since the project is located on Federal refuge land, the cost share would be 100 percent Federal.

The general design cost is estimated to be $136,000 with total costs estimated at $2,900,000.

STATUS: A letter report has been submitted to NCD. The general design phase is scheduled for completion in FY 87. Contract award is scheduled for FY 88.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM FACT SHEET

BIG TIMBER REHABILITATION AND ENHANCEMENT
POOL 17, UPPER MISSISSIPPI RIVER
LOUISA COUNTY, IOWA

LOCATION: Big Timber is a 500 acre backwater area at river mile 443, 5.5 miles upstream of Lock and Dam 17 and south of the city of Muscatine on the Iowa side of the Upper Mississippi River navigation channel.

RESOURCE PROBLEM: The area is experiencing advanced sedimentation with large portions of the area inaccessible at normal flow levels. Sediment enters from the downstream mouth at normal flows and from the upstream end when flow is elevated. Wetlands supporting non-game species including egrets and herons, and many species of birds, mammals, reptiles, amphibians, and invertebrates, are being converted to terrestrial habitat with associated species loss. Deep water fish habitat and areas of emergent aquatic vegetation supporting waterfowl are also disappearing.

PROPOSED PROJECT: The proposed project, pending planning, engineering, and environmental review, involves dredging deep holes to rehabilitate the fishery and reclaiming some of the heavily sedimented areas for waterfowl use by shallow dredging (2-3 feet) in shoreline areas where siltation and willow encroachment have occurred. The spoil from the shallow dredging sites may be placed in ridges up to 2 feet high to provide somewhat drier sites than currently exist in the area, increasing habitat diversity by providing the opportunity for the development of lowland hardwoods.

PROJECT BENEFITS: The proposed project is located within the Mark Twain National Wildlife Refuge and would produce national benefits. Habitat would be preserved for a wide range of animal life including waterfowl and other waterbirds, mammals, fish, reptiles, amphibians, and invertebrates. The expected life of what has been one of the richest backwater fish communities and an important spawning and nursery area would be prolonged, and habitat diversity would be increased.

FINANCIAL DATA: Since the project is located on Federal refuge land, the cost share would 100 percent Federal.

The general design cost is estimated to be $78,000 with total construction costs estimated at $633,000.

STATUS: A letter report will be prepared for submittal to NCD in FY 87. The general design phase is scheduled for completion in FY 89 pending receipt of funds. Contract award is scheduled for FY 89.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM FACT SHEET

LAKE ODESSA REHABILITATION AND ENHANCEMENT - PHASE I
POOLS 17-18, UPPER MISSISSIPPI RIVER, IOWA

LOCATION: Lake Odessa is a 6,800 acre backwater complex of open lake, marsh, timbered islands, ponds, and chutes, separated from the Mississippi River by a levee. It is located roughly half above and half below Lock and Dam 17, approximately 15 miles south of Muscatine, Iowa.

RESOURCE PROBLEM: While Lake Odessa has traditionally had high fall duck and geese populations and significant duck production, water level management with regard to drawdown, excess water release, and fall reflodding is restricted. Breaches of the low levee have resulted in impacts lasting several years to aquatic vegetation growth and consequently waterfowl, and the silt-ladened flood waters have also negatively affected the fishery. Sedimentation has caused a preponderance of shallow water habitat, causing winterkill and reducing the circulation of well oxygenated water.

PROPOSED PROJECT: Phase I of the proposed project, pending planning, engineering, and environmental review, would involve raising and broadening the levee with a driveable top width to enable annual maintenance. Existing inlet and outlet structures would be modified to improve control over water levels and an additional inlet structure would be constructed. Later phases would involve creation of new management areas having islands interspersed with open water. A pump would be installed to control water levels. Deep holes would be dredged and new structures located to rehabilitate and enhance the fishery. Clearing and dredging would open areas not currently accessible for management and increase the winter flow of oxygenated water.

PROJECT BENEFITS: The proposed project is located within the Mark Twain National Wildlife Refuge on both General Plan Land managed as a refuge by the Iowa Department of Natural Resources (about 4,000 acres) and on land managed by the U.S. Fish and Wildlife Service. National benefits would be produced. Water level management capabilities for fish and waterfowl would be improved and sedimentation would be reduced. Later phases would improve the flow of well oxygenated water, create new habitat for waterfowl and fish, and increase access and management opportunities.

FINANCIAL DATA: Since the project is located on Federally owned land managed as a national wildlife refuge, the cost share would be 100 percent Federal.

The general design cost of Phase I is estimated to be $168,000 with total construction costs estimated at $1,723,000.

STATUS: A letter report will be prepared for submittal to NCD in FY 88. The general design phase is scheduled for completion in FY 89 pending receipt of funds. Contract award is scheduled for FY 90.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM FACT SHEET

MOLO SLOUGH REHABILITATION
POOL 12, UPPER MISSISSIPPI RIVER
DUBUQUE COUNTY, IOWA

LOCATION: Molo Slough is an 100 acre side channel in the Nine Mile Island complex on the Iowa side of the Mississippi River navigation channel. It is located between approximate river miles 574.4 and 571.5 and is about 9 miles south of Dubuque, Iowa.

RESOURCE PROBLEM: Presently, backwater habitats for waterfowl and fish are very limited in both the Nine Mile Island complex and in upper Pool 12. Construction of a closing structure would greatly enhance habitat and its management. The river otter, a threatened species in Iowa, has recently been documented in the Molo Slough area. Continued habitat degradation may cause it to become endangered.

PROPOSED PROJECT: The proposed project, pending planning, engineering, and environmental review, involves construction of a complete closing dike with a water control structure across the upper end of Molo Slough.

PROJECT BENEFITS: The proposed project is located within the Upper Mississippi River Wild Life and Fish Refuge and would produce national benefits. Current flows and sediment transport through the slough would be greatly reduced. Habitat diversity, quantity, and quality for fish, wildlife, and furbearers would be increased from currently limited values in upper Pool 12.

FINANCIAL DATA: Since the project is located on Federal refuge land, the cost share would be 100 percent Federal.

The general design cost is estimated to be $100,000 with total construction costs estimated at $901,000.

STATUS: A letter report will be prepared for submittal to NCD in FY 88. The general design phase is scheduled for completion in FY 89 pending receipt of funds. Contract award is scheduled for FY 90.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM
FACT SHEET

HURON ISLAND REHABILITATION
POOL 18, UPPER MISSISSIPPI RIVER
DES MOINES COUNTY, IOWA

LOCATION: The Huron Island backwater complex comprises 2,000 acres of backwater lakes, sloughs, and islands on the Iowa side of the Mississippi River navigation channel. The project is located between river miles 421.7 and 424.8 and is approximately 24 miles north-northeast of Burlington, Iowa.

RESOURCE PROBLEM: This largest and most important island complex in the lower four pools of the Iowa portion of the Mississippi River is undergoing rapid sedimentation with concomitant loss of fisheries habitat. Portions of the project area have sedimented to the point that no fisheries benefits remain. Sedimentation has also reduced the productivity of waterfowl and furbearers.

PROPOSED PROJECT: The proposed project, pending planning, engineering, and environmental review, involves lengthwise and lateral dredging of the interior lakes and sloughs. The dredged material will be placed in berms and seeded with mast producing trees. Dredging would occur in two phases, riverward then landward, to avoid disruption of all of the habitat at the same time. The utility of partial closing structures to reduce sedimentation rates will be examined.

PROJECT BENEFITS: The proposed project is located on land owned by the Corps of Engineers and managed by the Iowa Department of Natural Resources and would produce national benefits. The useful life of this important backwater complex will be extended and the sedimentation rate reduced. Deepwater habitat will again exist for the fishery, increasing habitat diversity and enabling fish movement into areas protected from the current, suitable for spawning, and with reduced danger of winterkill. Dredging will also reverse the conversion of wetland into lowland brush, creating areas suitable for aquatic plants, waterfowl, and furbearers. Mast producing trees growing in the higher areas created by the placement of dredged material will provide a winter food source.

FINANCIAL DATA: Since the project is located on Federal refuge land managed as a national wildlife refuge, the cost share would be 100 percent Federal.

The general design cost is estimated to be $240,000 with total construction costs estimated at $2,544,000.

STATUS: A letter report will be prepared for submittal to NCD in FY 88. The general design phase is scheduled for completion in FY 89 pending receipt of funds. Contract award is scheduled for FY 90.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM
FACT SHEET

PRINCETON WILDLIFE MANAGEMENT AREA REHABILITATION AND ENHANCEMENT
POOL 14, UPPER MISSISSIPPI RIVER
SCOTT COUNTY, IOWA

LOCATION: The Princeton Wildlife Area is an 1190 acre floodplain marsh complex with surrounding uplands which is separated from the Mississippi River by a levee. It is located just downstream of the confluence of the Wapsipinicon and Mississippi Rivers on the Iowa side of the Mississippi River navigation channel between river miles 504 and 506.4, approximately 10 miles northeast of the Quad Cities.

RESOURCE PROBLEM: An extensive portion of the marsh is presently occupied by heavy emergent vegetative growth and woody growth is encroaching extensively around the perimeter of the wetland. Siltation from Mississippi River floods exacerbates vegetative encroachment into the marsh habitat with levee breaching an added danger.

PROPOSED PROJECT: The proposed project, pending planning, engineering, and environmental review, includes removal of approximately 24 inches of soil in three areas to create potholes. Excavated material would be placed on the levee which would then be armored with riprap.

PROJECT BENEFITS: The proposed project is located on General Plan land (772 acres) and on land owned in fee title (418 acres) by the Iowa Department of Natural Resources (IDNR). The entire area is managed as a national wildlife refuge and would produce national benefits. The potholes will create open water interspersed with heavy emergent vegetation providing habitat for migrating and nesting waterfowl, wading birds, furbearers, and other wetland-dwelling wildlife species. Material placed on the levee will reinforce it and improve water retention in the area which is currently controlled during the late summer with a 24 inch hydraulic pump. Riprap will strengthen the levee, extending the life of, and management opportunities in the Princeton Management Area.

FINANCIAL DATA: Since the project is located on Federally owned land and on land managed as a national wildlife refuge, the cost share would be 100 percent Federal.

The general design cost is estimated to be $224,000 with total construction costs estimated at $2,332,000.

STATUS: A letter report will be prepared for submittal to NCD in FY 89. The general design phase is scheduled for completion in FY 90 pending receipt of funds. Contract award is scheduled for FY 91.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM
FACT SHEET

MIDDLE SABULA LAKE REHABILITATION AND ENHANCEMENT
POOL 13, UPPER MISSISSIPPI RIVER
JACKSON COUNTY, IOWA

LOCATION: Middle Sabula Lake is a 300 acre backwater lake separated from the Mississippi River by a levee. It is located on the Iowa side of the Mississippi River navigation channel adjacent to the city of Sabula, Iowa and two miles southwest of Savanna, Illinois, at river mile 535.3.

RESOURCE PROBLEM: Bottom morphology of the lake is shallow and uniform, lacking structural diversity and contributing to frequent winterkills. Bluegill, crappie, and largemouth bass populations vary greatly depending on the extent of winterkill.

PROPOSED PROJECT: The proposed project invloves selective dredging to deepen the northeast corner of the lake. Aeration units would be installed to insure the supply of well oxygenated water during the winter. Riprap will be placed to enhance fisheries habitat and prevent shoreline erosion.

PROJECT BENEFITS: The proposed project is located on land owned by the Corps of Engineers which will be managed by the Iowa Department of Natural Resources as a national wildlife refuge. National benefits would be produced. The usable life expectancy of an area not subject to continuous siltation from the Mississippi River would be extended. Fisheries habitat diversity would be increased, allowing active fisheries management. Populations would become more stable with the significant reduction in winterkill. Placement of dredged material within the lake to provide additional submergent and emergent habitat will increase diversity for fish, waterfowl, and other water birds.

FINANCIAL DATA: Since the project is located on Federal land which will be managed as a national wildlife refuge, the cost share would be 100 percent Federal.

The general design cost is estimated to be $158,000 with total construction cost estimated at $1,590,000.

STATUS: A letter report will be prepared for submittal to NCD in FY 89. The general design phase is scheduled for completion in FY 90 pending receipt of funds. Contract award is scheduled for FY 91.

UPPER MISSISSIPPI RIVER SYSTEM - ENVIRONMENTAL MANAGEMENT PROGRAM FACT SHEET

GREEN ISLAND ENHANCEMENT
POOL 13, UPPER MISSISSIPPI RIVER
JACKSON COUNTY, IOWA

LOCATION: The Green Island State Wildlife Management Area is a 3635 acre backwater complex between river miles 545.8 and 548.8. It is located on the Iowa side of the Mississippi River navigation channel 8 miles southeast of Bellvue, Iowa.

RESOURCE PROBLEM: Presently, insufficient feeding and resting areas for migrating waterfowl exist on the lower reaches of the Upper Mississippi River. Improved water level control would enable improved waterfowl management. Periodic erosion of Blake's Lake's boundary dike results in loss of control of the Green Island Management Area.

PROPOSED PROJECT: The proposed project, pending planning, engineering, and environmental review, involves construction of a lowhead levee, access road, two water control structures and two hydraulic pumps. The Blake's Lake boundary dike would be riprapped.

PROJECT BENEFITS: The proposed project is located on Federally owned land managed as a national wildlife refuge by the Iowa Department of Natural Resources and would produce national benefits. Construction would result in 1,100 acres of additional wetland and 300 acres of saturated winter wheat and stubble fields which would attract and hold significant numbers of migrant waterfowl during the spring and fall. Improved waterfowl management will allow expansion of the existing furbearer population. Aquatic habitat will be deepened by construction excavation, improving the local fishery, which will also be helped by better water level control. The riprapping of the Blake's Lake dike will reduce loss of management control due to dike failure.

FINANCIAL DATA: Since the project is located on Federally owned land managed as a national wildlife refuge, the cost share would be 100 percent Federal.

The general design cost is estimated to be $140,000 with total construction costs estimated at $1,378,000.

STATUS: A letter report will be prepared for submittal to NCD in FY 89. The general design phase is scheduled for completion in FY 90 pending receipt of funds. Contract award is scheduled for FY 91.

STATEMENT OF THE NEBRASKA NATURAL RESOURCES COMMISSION

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, I AM CLIFFORD WELSH, VICE-CHAIRMAN OF THE NEBRASKA NATURAL RESOURCES COMMISSION. I REPRESENT THE SOUTH PLATTE RIVER BASIN ON THE COMMISSION, AND I AM A FARMER RESIDING AND FARMING IN WESTERN NEBRASKA.

THE NEBRASKA NATURAL RESOURCES COMMISSION IS AN AGENCY OF THE STATE OF NEBRASKA DESIGNATED TO PLAN, DEVELOP AND ENCOURAGE THE IMPLEMENTATION OF A COMPREHENSIVE PROGRAM OF RESOURCE DEVELOPMENT, CONSERVATION AND UTILIZATION FOR THE SOIL AND WATER RESOURCES OF THE STATE IN COOPERATION WITH OTHER LOCAL, STATE AND FEDERAL AGENCIES AND ORGANIZATIONS. THE COMMISSION HAS 16 MEMBERS. THE MEMBERSHIP IS COMPRISED OF ONE RESIDENT OF EACH OF THE STATE'S 12 RIVER BASINS AND ONE ADDITIONAL RESIDENT OF THE RIVER BASIN WHICH ENCOMPASSES THE CITY OF OMAHA WHO ARE SELECTED BY THE LOCALLY ELECTED MEMBERS OF NATURAL RESOURCES DISTRICT'S BOARD OF DIRECTORS RESIDING IN THE RESPECTIVE RIVER BASIN AND 3 MEMBERS APPOINTED BY THE GOVERNOR OF WHICH ONE SHALL REPRESENT MUNICIPAL USERS OF WATER, ONE SHALL REPRESENT SURFACE WATER IRRIGATORS AND ONE SHALL REPRESENT GROUND WATER IRRIGATORS.

THE NEBRASKA NATURAL RESOURCES COMMISSION SUPPORTS ADEQUATE FUNDING LEVELS TO CONTINUE ON-GOING PLANNING OR CONSTRUCTION FOR THE:

AINSWORTH UNIT PROJECT
FARWELL IRRIGATION DISTRICT PROJECT
LOUP RIVER BASIN STUDY
MISSOURI NATIONAL RECREATION AND BANK STABILIZATION PROJECT
NORTH LOUP DIVISION PROJECT
O'NEILL UNIT PROJECT
PAPILLION AND TRIBUTARIES LAKES PROJECT
PLATTE RIVER BASIN, NEBRASKA, WYOMING AND COLORADO
PRAIRIE BEND PROJECT

THE NEBRASKA NATURAL RESOURCES COMMISSION ALSO SUPPORTS ADEQUATE FUNDING LEVELS FOR PLANNING AND CONSTRUCTION FOR THE:

GRAND ISLAND FLOOD CONTROL PROJECT
UNIVERSITY OF NEBRASKA GROUND WATER SOLUTE
    MOVEMENT LABORATORY SYSTEM
GROUND WATER RECHARGE DEMONSTRATION PROGRAM
PLATTE RIVER BANK STABILIZATION DEMONSTRATION PROJECTS

I WILL NOW BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE.

THANK YOU FOR THE OPPORTUNITY TO TESTIFY BEFORE YOU TODAY. I THANK YOU FOR YOUR KIND ATTENTION.

Letter From Charles H. Gardner, President, Association of State Dam Safety Officials

March 20, 1987

The Honorable Bennett Johnston, Chairman
Senate Appropriations Subcommittee on
Energy and Water Development
Washington, D.C. 20510

RE: Appropriations for Title XII of PL 99-662
Dam Safety Act of 1986

Dear Senator Johnston:

Enclosed is a copy of a March 19, 1987 front page Wall Street Journal article that points to the need for appropriating funds for Title XII of PL 99-662.

Unfortunately, dam failure disasters will occur, and they will affect the economy in losses and the Federal budget in disaster relief. These losses could be significantly reduced by implementing Title XII, which would strengthen our State dam safety laws and inspection programs.

The Corps of Engineers top executives have an extremely passive attitude about the safety of non-Federal dams. This is illustrated by their refusal to request the funds authorized by Title XII. They can be brought to action by your appropriations subcommittee or by political and executive pressure following another dam failure disaster. I hope you will support us in preventing disasters, not just responding to them.

It is requested that my letter to you of March 11, 1987, this letter, and the attached article be entered as testimony on this issue. As previously mentioned, we would like to have an opportunity to present oral testimony at your hearings.

Your consideration of this important issue and our request will be appreciated.

Sincerely,

Charles H. Gardner

Charles H. Gardner, P.E.
President

[The Wall Street Journal, Thursday, March 19, 1987]

DAMS' SAFETY WORRIES OFFICIALS WHO BELIEVE REPAIRS ARE LAGGING

By BRUCE INGERSOLL

Staff Reporter of THE WALL STREET JOURNAL

MONCKS CORNER, S.C. – The 1983 dam scare here is remembered as "the peril at Pinopolis."

On a languid summer morning, the West Pinopolis Dam suddenly sprang an enormous leak, setting off alarms in the powerhouse. While the police rapped on doors to evacuate downstream residents, emergency workers struggled to keep the huge dam from collapsing. They tried plugging the leak with weighted bales of hay. They tried steel plates. Increasingly desperate, they bought a furniture store's entire stock of mattresses, only to find them too buoyant. Finally, they slapped together a makeshift dam with pile-driven utility poles.

A disaster was averted–for the time being. But federal dam regulators worry that West Pinopolis is one of many dams around the country that would collapse if a severe earthquake hit. Hundreds of dams couldn't withstand a major flood. Thousands more have fallen into disrepair, some leaking or slumping so badly that they are in danger of collapse.

"One of these times, Mother Luck isn't going to hold," warns William Bivins, the dam safety coordinator for the Federal Emergency Management Agency. "One of these high-hazard dams is going to pop at night when everybody is asleep in bed. It will wipe out hundreds of people."

Recent Dam Breaks

But to some top officials, warnings about dam disasters are overblown, and in most states public interest in dam safety is low. In the 1970s, nearly 500 people died in six major U.S. dam breaks, but in the 1980s the fatalities have been few in this country, though a 1985 dam break in Italy killed more than 220 people.

Meanwhile, dam-safety initiatives have been slowed by tight budgets, bureaucratic inertia and the lack of a political constituency. "All of our constituents are dead people," says safety advocate Bruce Tschantz, a professor of civil engineering at the University of Tennessee.

Of the 80,000 or so dams in the U.S., about 8,000 are owned or regulated by federal agencies. The rest are owned by farmers, ranchers, developers, utilities or states and municipalities. Most major dams are owned and maintained by big agencies such as the Pentagon's Army Corps of Engineers and the Interior Department's Bureau of Reclamation.

Idaho Disaster

The bureau is still haunted by the 1976 collapse of the Teton Dam in Idaho as it was being filled for the first time, killing 11 people. One-fifth of the bureau's 800 dams, all in the West, are classified as unsafe. Critics say the bureau doesn't treat dam safety as a priority. Bureau officials disagree, but since 1980 the agency has spent only 11% of $750 million authorized by Congress for safety "modifications."

Internal documents obtained from the Corps of Engineers, meanwhile, show that a superflood would overwhelm at least 20 of that agency's 600 dams, engulfing such communities as Houston and Valley City, N.D. The corps is also studying how well several structures, including two dikes on the Clemson University campus in South Carolina, would hold up in a major earthquake. If the dikes failed, the football stadium, dubbed "Death Valley" by Clemson's foes, would be swamped. Overall, "We are concerned about 36 dams," says Lloyd Duscha, the corps' deputy director of engineering and construction.

Remedial efforts have been limited, however. Some cost-conscious Reagan administration appointees haven't shared agency engineers' sense of urgency. "Bureaucratic engineers always try to figure out a way to perpetuate themselves and build up their budgets," asserts William Gianelli, who in recent years oversaw the corps as assistant Army secretary for civil works.

Underfunded and Undermanned

On the state level, the number of unsafe dams has been reduced to 1,948 from about 2,900 in 1981, according to a survey for the Federal Emergency Management Agency. Many dam owners simply dismantled their aging structures rather than make repairs. But the survey says that only 21 states have adequate regulatory programs and that the rest are underfunded and undermanned.

For Joseph Ellam, Pennsylvania's director of dam safety, the situation is unsettling. "Catastrophic failures have occurred before, and they will occur again," he warns. "With the exception of nuclear power plants, no man-made structure has a greater potential for killing a large number of people than a dam."

The West Pinopolis Dam, 30 miles from Charleston, S.C., is one such dam.

Although the dam now is in good repair, earthquake experts believe it would fail in the event of an earthquake as powerful as the devastating Charleston earthquake of 1886, which killed 86 persons and caused panic as far away as Cleveland.

If the dam failed, some 2,000 residents along the Cooper River "wouldn't have any time to run for their lives," says Ronald Corso, the director of hydropower licensing for the Federal Energy Regulatory Commission. The flood would engulf the Charleston Naval Yard and the Atlantic Fleet's nuclear-weapons arsenal as well as a major industrial corridor, causing $1 billion in damage. It would also clog Charleston's harbor with silt, closing a key port for the Navy.

The dam is vulnerable to an extraordinary phenomenon known as "liquefaction," Mr. Corso says. Seismic shock waves could "liquefy" the sand in the dam's foundation, turning it into quicksand or "mush." The shuddering dam would quickly slump, spilling the waters of Lake Moultrie in a thunderous rush.

The dam's owner, South Carolina Public Service Authority, also known as Santee Cooper, calls the chance of such a disaster remote, but the state-owned utility, under federal pressure, has agreed to strengthen the dam. "We don't care where they get the money so long as they fix it," Mr. Corso says.

Other Worries

The energy regulatory commission has worries about more than 100 of the 2,000 dams it regulates and has ordered several utilities to make repairs. Montana Power Co., for one, is rehabilitating an ice-battered dam near Missoula to protect the Clark Fork River. It holds back tons of toxic smelting waste in the bottom silt, Mr. Corso says. "If you dump that waste down the river, it will be the biggest mess known to mankind."

The Tennessee Valley Authority has pared its list of unsafe dams to 14 from 21. Fixing Fontana Dam in western North Carolina is a high priority. At 480 feet, Fontana is the tallest dam east of the Rocky Mountains. The upper part of the dam needs reinforcing against a major earthquake. And an alarming 100-foot-long crack in the concrete has reopened and requires restitching with cables.

In Wyoming, Reclamation Bureau officials are keeping close watch on the badly leaking Fontenelle Dam on the Green River. The same sort of seepage that caused a near-failure in 1965 is undermining the dam. The officials are keeping the reservoir level as low as possible, rather than risk deluging Green River, Wyo., (population: 13,000), but they admit to being at "Mother Nature's mercy."

Last summer, so much melted snow came down from the mountains that officials couldn't discharge water fast enough to keep the reservoir from refilling. "We baby-sat that dam night and day," says one Reclamation Bureau official. "We had two bulldozer operators there 24 hours a day."

Support Is Lacking

For years, federal officials in the field have been warning their superiors about Fontanelle and other deteriorating dams. But cumbersome cost-sharing arrangements and resistance from the White House budget office have limited the Reclamation Bureau's efforts to a few projects. While the agency has begun budgeting more money for dam safety, many other projects will have to wait.

"It takes a long time to get momentum building behind a program, especially when it doesn't have high administration support," says Neil Parrett, the bureau's chief of dam design. "We all could do better. But I celebrate the progress we've made to reduce the threat out there."

The Reclamation Bureau, like most of its regulatory brethren, has been slow to bring its substandard dams into compliance with the latest safety guidelines, as ordered by President Jimmy Carter in 1979. Federal dams should be stable enough to withstand the "maximum credible earthquake," usually defined as the quake from a known source like California's San Andreas Fault that could cause the most severe "vibratory ground motion" at a dam site.

Under the guidelines, federal dams should also have enough spillway capacity to discharge the "probable maximum flood." Hydrologists calculate such a flood on the basis of the worst combination of meteorological and hydrological events likely to occur in watershed. In the Rockies, for example, it could be heavy rains mixed with a record snowmelt.

The 'Overtopping' Problem

Several Reclamation Bureau dams, including four on the Salt River and two on the Verde River in Arizona, are vulnerable to "overtopping" by a superflood. The crucial dam is a national historic monument, Theodore Roosevelt Dam. If it were overtopped by the probable maximum flood on the Salt, the top of the dam would crumble, triggering a "domino effect," says the bureau's Mr. Parrett.

The flood would heavily damage two downriver dams, knock out a third and surge on toward Phoenix. "Phoenix gets drowned," Mr. Parrett says. An estimated 250,000 people would be flooded; property damages would hit $9.5 billion.

The Corps of Engineers has made even less headway than the Reclamation Bureau, largely because of budget ceilings and high-level skepticism at the Pentagon about probable maximum floods. The corps under Mr. Gianelli undertook only two dam modifications between 1981 and 1984. In contrast, the much smaller TVA started five. Mr. Gianelli, now a engineering consultant in California, says that the corps could never explain to his satisfaction how it calculated the probable maximum flood.

Prado Dam, perched in a canyon above suburban Los Angeles, is one project that Mr. Gianelli held up. If the dam failed, the probable maximum flood on the Santa Ana River would inundate 1.3 million residents in Anaheim and other suburbs and cause as much as $40 billion in damages, mostly in Orange County, according to the corps's risk assessment.

Mr. Gianelli, who served as California's water resources director under Gov. Ronald Reagan, remains unpersuaded. "That dam has been there 50 years," he says. "It has never filled to the point where the spillway is even used. You fix a dam if it's leaking."

In the private sector, meanwhile, dam safety continues to lag. Some farmers scoff at warnings that the dams they built with the Soil Conservation Service's assistance are about to flood out their neighbors. And many corporate dam owners put off costly repairs.

"It's the last place anybody wants to spend money," says Gerald W. Farquhar, a Washington attorney. "Everybody says it'll be the other fellow's dam that goes."

Among state governments, money for regulating dams remains tight. While California leads the nation with a $3.8 million budget and a 60-person staff, most states make do with much less—on average, $265,000 a year. Some states, including Delaware, Alabama and Hawaii, don't yet have a semblance of a dam-safety program.

Pennsylvania, however, has accomplished more than most federal agencies, whittling its backlog of 208 unsafe dams to 72 in five years. More than $50 million, including low-interest state loans, has gone into dam repairs, usually under consent agreements with the state. The Pennsylvania Gas & Water Co. has agreed to fix 16 water-supply dams, while the Greater Johnstown Water Authority has promised to fix or dismantle the Salt Lick Dam near the site of a famous dam-break nearly a century ago.

"If Salt Lick were to fail," says the state's Mr. Ellam, "it would be as bad as the great Johnstown Flood of 1889, the greatest catastrophe in U.S. history," that swept 2,200 persons to their deaths.

CONCLUSION OF HEARINGS

Senator COCHRAN. With that, the hearing of this subcommittee is adjourned. The subcommittee will recess and reconvene at the call of the Chair.

[Whereupon, at 3:30 p.m. Wednesday, April 1, the hearings were concluded and the subcommittee was recessed, to reconvene at the call of the Chair.]

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